MEDICAL PORTRAIT GALLERY.

BIOGRAPHICAL MEMOIRS

OF THE MOST CELEBRATED

PHYSICIANS, SURGEONS,

ETC. ETC.

WHO HAVE CONTRIBUTED TO

THE ADVANCEMENT OF MEDICAL SCIENCE.

BY

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"APOLLINEO NOMINA DIGNA CHORO."

VOL. I.

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" I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves, by way of amends, to be a help and ornament thereunto. This is performed, in some degree, by the honest and liberal practice of a profession; where men shall carry a respect not to descend into any course that is corrupt and unworthy thereof, and preserve themselves free from the abuses wherewith the same profession is noted to be infected: but much more is this performed, if a man be able to visit and strengthen the roots and foundation of the science itself; thereby not only gracing it in reputation and dignity, but also amplifying it in profession and substance."—Bacon.

PREFACE.

The biography of Medical Men is admitted to be very generally defective. Of those from whose researches mankind has reaped so much benefit, it is not a little remarkable, that few particulars of their lives are known; and that which has been said of men of letters, may perhaps apply with especial force to members of the Medical Profession, that *their lives are to be found in their writings*. Men extensively engaged in the duties of an arduous profession, have little leisure to mix with the world, or take part in the transactions of public life: they are, nevertheless, objects of great attention; their pursuits enable them to obtain an insight into the springs of action, and to view man under all the sufferings of pain and disease, and thus afford opportunities of discerning the strength or the weakness of the human character. The biography of Men of Science may not in its perusal be calculated so to awaken the spirit, or to excite such powerful emotions, as a narrative of the exploits of warriors, or the subtleties of statesmen; but it is more likely to afford delight and instruction, inasmuch as it offers to us objects of imitation and emulation; and it should never be forgotten, that in extending the boundaries of science, we also contribute to the happiness of mankind.

The History of the Progress of Medicine, it is presumed, cannot be more agreeably displayed, than in a detail of the researches of the most celebrated professional men, who have successfully toiled in the pursuit of science. It is pleasing to contemplate the conduct and character of those whose labours have tended to the amelioration of the miseries and sufferings of their fellow-creatures; and it will afford much gratification to find, enrolled among the members of the Medical Profession, some of the chief philanthropists of the age in which they lived. The variety of anecdote afforded by the mode adopted in this work of Illustrated Professional Biography, admits of the combination of the *utile dulci*, and obviates the fatigue which would accompany a more detailed or consecutive narrative, or chronological order of the History of the Science.

In the proposed series, the History of the Profession is intended to be given; its progress displayed, and the various discoveries in Anatomical and Physiological Science, which have formed the basis of the improvements in the Practice of Medicine, recorded. To each individual it has been, and will continue to be, my endeavour faithfully to assign that which is due, and to award the just meed of praise. The science of Medicine is, even at this day, in a very imperfect state — it is the work of Art in the field of Nature; and patient observation and laborious research, for a very lengthened period, are absolutely necessary to bring it to any thing like perfection.

Many eminent physicians, it will be found, have by their writings advanced the *literature* as well as promoted the *science* of their countries, and have been the bosom friends of the wise and good. In this country, Pope, Johnson, Parr, and others, have borne testimony to their talents and virtues. Pope has said, "They are in general the most amiable companions, and the best friends, as well as the most learned men, I know." Dr. Johnson remarks, "I believe every man has found in physicians great liberality and dignity of sentiment, very prompt effusion of beneficence, and willingness to exert a lucrative art where there is no hope of lucre." The Rev. Dr. Parr observes, "I have long been in the habit of reading on medical subjects, and the great advantage I have derived from this circumstance is, that I have found opportunities for conversation and friendship with a class of men whom, after a long and attentive survey of literary characters, I hold to be the most enlightened professional persons in the whole circle of human arts and sciences." "In no order, (says Dr. Knox,) are there to be found individuals better informed, more polite, humane, and ingenious, than among the physicians." Such have been the feelings and opinions of men renowned for their learning, and deservedly eminent for their knowledge of mankind; and such testimony ought to make a deep impression upon the minds of the members of the profession, and stimulate them to diligence in the pursuit of their studies.

To facilitate this object, as well as to conduce to the pleasure of the general reader, by laying before him the various incidents in professional life, and the satisfaction derived from a constant study of the welfare of mankind, has been my aim in the present work; the publication of which is intended to give a complete portraiture of the Progress of Medical Science; and as the subjects embraced by it will include notices of the LIVING as well as the dead, it may not, perhaps, be unreasonably supposed, that panegyric may, in some instances, be found to supply the place of truth, or that controversy and angry feeling may ensue from an exposition of faults and errors. Neither of these suspicions, it is presumed, has, or will be verified, as it will be my studious endeavour faithfully to portray all points connected

with the professional character of the various subjects of the Memoirs, and none will be admitted into this "Portrait Gallery," who have not promoted the advancement of Medical Science. For the opinions given upon the writings of the respective authors, I feel myself to be responsible, and will willingly incur the risk of censure for the judgment I may pronounce, which will not be made without due consideration, and be the fruit of a long-continued course of severe study, united to the advantages derived from considerable practical experience.

Various opinions have already been expressed upon the subject of this work. Objections have been raised to the introduction of LIVING characters, and it seems to me, in the arguments that have been urged against this department, to have entirely escaped the attention of the critics, that I have not undertaken to write *personal* but *professional* biography. The greatest fear seems to be entertained that the Memoirs may be too panegyrical. My plan, it must be recollected, is only to embrace the notice of those who, by their researches, have contributed to the advancement of medical science, and of these, it would be very difficult to speak but in terms of a gratification naturally and unavoidably felt at the improvements they have introduced; but this, I trust, has been done with proper discrimination. I will confidently venture to say, that no undue praise has been lavished upon any individual whose memoir I have inserted in this publication. No one can entertain a stronger aversion to adulation than I do. I think it inconsistent with either good sense, propriety, or the freedom which in this country we all happily enjoy. "Assentatio, vitiorum adjutrix, procul amoveatur; quæ non modo amico, sed me libero quidem digna est."* And I agree with Felltham,† when he says that "there is no detraction worse than to over-praise a man; for if his worth prove short of what report doth speak him, his own actions are ever giving the lie to his honour."

One writer laments the want of a more independent plan. What, I would ask, can be more independent than that which embraces in distinct articles the labours of each professional man? The Memoirs are separate—they are distinctly paged—they may be arranged chronologically, or alphabetically, or according to the departments of the profession to which the members respectively belonged. I feel the greatest and most reasonable objection to my plan is, that it is not pursued according to the order of time; I wish that it had been otherwise; but, interesting and useful as the memoirs of the earlier physicians and surgeons may be to a few professional readers, I am sure they will see that it would be impossible to continue the work in such an order, for the expense attending the execution of the portraits of the ancient dead would not have found an equivalent in the extent of patronage afforded by the living. But, as a chronological or any other

* Cicero de Amicitia. † Resolves by Owen Felltham.

arrangement is not put aside, the memoirs can be placed in the order that may suit the inclination or disposition of the possessor: physicians may be separated from surgeons—foreigners from those of our own country—or the living from the dead. Whatever may be the plan adopted, it is likely that some objection will offer. I have endeavoured to adopt that which I have thought best calculated to effect my object, and for the execution of it I am ready to submit to the opinion of the profession and the public. I have freely given the results of my own reading and my own practice, and I trust that I have not in an unbecoming manner expressed my opinions in opposition to those of longer standing in the profession than myself, and those who may have greater claims upon the respect and gratitude of mankind.

The portraits have been selected from the most approved and authentic sources, and executed by the ablest artists. The greater number have never before appeared, and many have been expressly painted for the work by Mr. Henry Room, a very able, and most promising artist. As the countenance is the "index of the mind," portraits of distinguished men have ever been looked upon with pleasure, and faithful resemblances have been eagerly sought after. By a survey of the features of the "human face divine," we distinguish the man of science from the man of pleasure—the philosopher, the moralist, and the student, from the inane, the insipid, and the vulgar. "A real portrait," says Lord Orford, "is truth itself, and calls up so many collateral ideas as to fill an intelligent mind more than any other species." Eminent men represented with all the charms of the pencil, and with the true and real expression of their countenances, must ever animate the bosom with a love of their excellence.

In the memoir of LINACRE, I have omitted to acknowledge my obligation to the Royal College of Physicians for their permission, most kindly given, to copy their portrait of the founder of their college, and its first president. The picture in the college is taken from one which was formerly in Kensington Palace, and has been attributed to the pencil of Quintin Matsys. The accuracy of this I am disposed to question, and should rather refer to it as a production by the celebrated Holbein. The former artist is, however, stated by the Rev. James Dallaway, in his edition of Horace Walpole's Anecdotes of Painting in England, to have drawn the picture of Dr. Linacre in the year 1521, which agrees with the date attached to this portrait, yet Linacre was abroad only in some period between 1480 and 1487, at which time he was but little more than twenty years of age. Holbein, it is known, was patronized by Henry VIII., and painted most, if not all, the celebrated people of his court.

The Rev. Mr. Dyce has kindly acquainted me with some particulars relative to AKENSIDE, which I notice in this place, to render the memoir

of the poet and physician more complete. The "Hymn to Science" was written at Newcastle, not at Edinburgh, and is inserted in the Gentleman's Magazine for October, 1739; but the "Ode on the Winter Solstice" was composed at Edinburgh. The "Pleasures of Imagination" was published before his visit to Leyden, and was put forth anonymously in January, 1744, price 4s. in 4to., and in the May following at 2s. in 8vo. In a letter to Mr. Dyson, August 18, 1742, he calls himself "surgeon" in Newcastle-upon-Tyne. He commenced practice at Northampton in June, 1744. He had a house in Bloomsbury-Square, whence he removed to Craven-Street, and thence to Burlington-Street, where he died. He received a Doctor's degree at Cambridge in 1753, having been admitted a licentiate of the College of Physicians June 20, 1751, and a Fellow of that body April 8, 1754. His lectures on the lymphatic system were delivered May 28, 29, and 30, 1755. He was elected Physician to St. Thomas's Hospital, October 18, 1759. Upon the authority of Dr. F. Hawkins, the registrar of the College of Physicians, Dr. Akenside was thanked by the college in 1766, for his trouble in preparing Harvey's Works for the press, and for prefixing a preface which was printed in that edition, together with a Life of Harvey by Dr. Lawrence.

In the enumeration of the Works by the late DR. JOHN CLARKE, I had relied upon the authority of Watt, and inserted two works of which he could not have been the author, as they appeared in 1751. They are tracts relating to the employment of male practitioners in midwifery.

The portrait of CAIUS is from a mezzotint by Faber, taken from a picture in Gonville and Caius College. The autograph affixed is from a deed belonging to the college, and for the fac-simile of which I am indebted to the learned master of the college.

The portrait of DR. RADCLIFFE is from a painting by Sir Godfrey Kneller, purchased from the collection of Dr. Mead by Dr. William Hunter, and now preserved in the Hunterian Museum at Glasgow. The autograph affixed to this plate is taken from a book in which he inserted his name when he first entered at the University of Oxford.

The autograph of ALBINUS is taken from a letter in the possession of Mr. Stone, jun., at the Royal College of Surgeons.

T. J. PETTIGREW.

SAVILLE ROW.

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ÆSCULAPIUS.

"Homines ad Deos nullâ re propriis accedunt, quam salutem hominibus dando." CICERO.

THE HISTORY OF MEDICINE has been advantageously divided into four periods; the first of which embraces not less than 3000 years, extending from the time of the deluge to that of the Arabian physicians.

The medical art, including both Physic and Surgery, a distinction of later times, is generally admitted to have taken its rise among the Egyptians, but to have been brought to considerable perfection by the cultivation of the Greeks. All the facts connected with the earliest period of the history of medicine must be regarded with great doubt, being involved in the mystery of fabulous narration. The existence, however, of certain practices employed as remedial agents, have been handed down to us, and the records of them are to be considered as entitled to some degree of credit.

Medicine was divided into various kinds; and these divisions had their respective followers — DIETETICAL, PHARMACEUTICAL, and CHIRURGICAL. The professors were divided into sects: EMPIRICS, DOGMATISTS, METHODISTS. Many of the works of those whose names are preserved to us have perished by the hand of time.

In the FIRST period, omitting all that may be regarded as belonging to the fabulous age, are the celebrated names of Hippocrates, Plato, Aristotle, Callisthenes, Epicurus, Erasistratus, Herophilus, Themison, Thessalus, Leonidas, Plutarch, Celsus, Aretæus, Cœlius Aurelianus, Galen, Oribasius, Ætius, Alexander de Tralles, Paulus de Ægina, and Actuarius.

The SECOND period embraces the Arabian physicians, who must be looked upon chiefly as servile copyists of Galen and Aristotle. Many remedies were, however, added by these physicians, and some diseases, as, for example, the small-pox and the measles, have been, for the first time, well described; so accurate, indeed, have been the descriptions of these maladies, that little, if any thing, has been since added to their history. Among the Arabian physicians, the most renowned are Mesué, Rhazes,

Avicenna, Averröes, Haly-Abbas, Albucasis; and in this period, in Europe, Arnoldus de Villa Nova, Roger Bacon, and Basil Valentine, celebrated for his alchemical knowledge. This will be sufficient to show how much in its infancy medicine was, as a science, at this period. The foundation of the schools of Salerno and Montpellier seemed to diffuse knowledge; but the art of healing was truly given up to the empirics and to the monks. The second period did therefore but little for the advancement of medicine.

The THIRD period delivered medicine from the hands of the Arabs to those of the Europeans. Europe, however, was but slowly emerging from the ignorance which a state of barbarism had produced, and was, about the middle of the 15th century, recovering from the effects of the bloody wars in Italy, and the boundless luxury of the Roman empire. Efforts were now made to bring to light the productions of former times; princes gave encouragement to the learned to translate the MSS. of former ages; and these translations, disseminated by the invention of printing, promoted the civilization of Europe, and extended the knowledge of the medical art. Many eminent men belong to this period, as Celsus, Mercurialis, and Martianus, among the Italians; and Fernelius, Ballon, Duret, Houlier, and Jacot, among the French. Paracelsus must be mentioned as belonging to this era, although his speculations scarcely entitle him to be named as a benefactor to, or promoter of, medical science.

It is in the FOURTH period that we find the respected names of Harvey, Sydenham, Sanctorius, Gorter, Baglivi, Morton, Hoffman, Riverius, Etmuller, Stahl, Boerhaave, Mead, Freind, and others, who are familiar to us at this day, and whose observations are entitled to the most serious attention and regard.

The zeal now manifested in anatomical researches, the physiological views based upon them, and the consequent improvement of medical practice, the natural result of so correct and judicious a system, deserves the most fixed contemplation of the practitioner. The labours of Morgagni, Desault, Sabatier, Chaussier, Vicq d'Azyr, Sauvauges, Cullen, Astruc, Stoll, Fothergill, the Hunters, Jenner, &c., have contributed much to the advancement of professional knowledge; and the skill of the chemist, by the researches of Lavoisier, Fourcroy, Davy, and others, have assisted in promoting the march of science. In later times, that is, during the present century, every branch of science has rapidly advanced; and the manner in which anatomical and physiological pursuits are now conducted, the zeal with which the several tissues of which the body is composed, are developed, and the general views entertained of the whole system of nature, promise greatly for the future perfection of the science of medicine. What

can be more interesting to, or more worthy the observation of the philosopher, than to contemplate the progress of the human mind, as exhibited in the advancement of a science, the object of which is the relief of the sick, and the preservation of our fellow-creatures. Every man was, probably, at the commencement of the world, a physician; every one would study that which was calculated to assuage pain, or guard against disorder. In this sense, a French writer has marked the first, or earliest period, of medical science, as POPULAR; that it was EMPIRICAL there can be no doubt; it must necessarily have been founded on experience and imitation: it would descend from generation to generation, as we find it to have done in savage nations, from the accounts which have been handed down to us by various travellers. But their remedial agents extend little beyond those which are derived from the vegetable kingdom of nature, and are necessarily limited in their operation.

Among the Babylonians and the Egyptians, according to Herodotus and other authorities, the sick were exposed to the passers-by, who were expected not only to discover the ills of the afflicted, but to prescribe the remedies that might be necessary for their cure. These means for the relief of disease, we learn, were afterwards collected together, and inscribed either in the sacred books of the priests, or, as Iamblichus reports, upon columns, and preserved in the temples. Of the antiquity of medicine there cannot exist a doubt; but its earliest history is so enveloped in fable, that it is impossible to unravel it. Menes is the most ancient king of Egypt of whom we possess any records. His son Athotis is mentioned by Manetho as the author of several books on anatomy; which would of itself demonstrate some progress in the science, and a removal from that empirical character with which it must necessarily have commenced. Next to this illustrious professor of the medical art, must be mentioned Hermes Trismegistus, who has been confounded with the Thoth of the Egyptians—the Egyptian Mercury—who is reported to have been the inventor of all the arts and sciences. The priests of Egypt were the possessors of all the knowledge and learning of the Egyptians: this knowledge is said to have been contained in the Hermetic books, forty-two in number, (according to Clement of Alexandria), of which the last six related to medicine.

The Egyptians divided the human body into thirty-six parts, each of which they believed to be under the particular government of one of the decans, or aerial demons, who presided over the triple divisions of the twelve signs; and Origen says, that when any part of the body was diseased, a cure was effected by invoking the demon to whose province it belonged. A kind of theological anatomy has thus been made out by the

late Mr. Champollion,* from the great funereal ritual, or book of the Manifestations. This is expressed, on various mummy-cases, in hieroglyphical characters; and may we not in this trace the first attempt to assign the different parts of the body to the several planets, which has been continued down to the present day in the renowned and popular astrological almanack of Francis Moore, physician?

The Egyptian Horus, son of Osiris and Isis, has been looked upon as the Grecian Apollo,† and usually regarded as the god of physic; and from Apollo, Æsculapius springs. Bacon says, "The variable composition of man's body hath made it as an instrument easy to distemper; and therefore the poets did well to conjoin music and medicine in Apollo: because the office of medicine is but to tune this curious harp of man's body, and to reduce it to harmony."

The Egyptian must not be confounded with the Grecian Æsculapius. The history attaching to the former is exceedingly obscure. Mr. Salt first discovered Æsculapius as a deity in the island of Philæ, where there was a small sanctuary, having a Greek inscription dedicating the temple to him. Mr. Wilkinson informs us‡ that he was worshipped at Memphis, and on a certain mountain on the Libyan side of the Nile, near the City of Crocodiles, where he was reported to have been buried, if he were the first Æsculapius, the reputed inventor of medicine. But it must be recollected that the Egyptians admitted two deities of this name. Macrobius makes Æsculapius the beneficent force of the sun, which pervaded the souls and bodies of man; but Mr. Wilkinson thinks it more probable that he was the healing power of the Creator, which averted misfortunes and illness from mankind.

Hermes is looked upon, in the Egyptian mythology, as the god of letters. He is the same as Taut or Thoth, Mercury or the Moon. He has been confounded with Hermes Trismegistus;§ but *Trismegistus* does not in any way apply to letters, but simply means, "thrice great." There is great difficulty in making out this Egyptian deity, from the variety of appellations he bears, in accordance with the different characters ascribed to him. It would occupy too much space, and at the same time, be inconsistent with the design of the sketches in this work, to enter upon an enumeration of them in this place; but that mentioned by Horapollo must be noticed,

* See Pettigrew's History of Egyptian Mummies.

† Millin says, (Mem. Med. Soc. d'Emulation, t. 5. p. 344.) Apollo is first mentioned as the god of medicine, in the Orphic Hymns. (xxxiii. 1. Argon. 173.)

‡ Materia Hieroglyphica. § Tourtelle Hist. Phil. de la Médecine.

for this author describes Thoth, or Hermes, as holding a palm-branch, emblematic of a year and a month; and to this is attached the symbol of life and man in embryo, under the form of a frog.

The mythological veil under which all traces of the history of Egyptian medicine are to be found, serves only to demonstrate that the whole is to be regarded as allegorical, as far as relates to the personages mentioned. No human being was ever admitted into the order of the Egyptian gods, and no Egyptian god could ever have lived upon earth. The whole matter, then, reduces itself to fabulous history. Medicine, however, took its rise in the East, passed into Egypt, thence into Greece, and so was disseminated throughout the civilized world. The profession of medicine in Egypt was confined to the priests, and it descended hereditarily with them. If the account of the Hermetic books is to be relied on, there were treatises on different parts of the body, the structure and diseases of the eye, and the operations necessary for their cure. Every Egyptian was required to follow the profession of his father; and Herodotus tells us,* that the science of medicine was distributed into different parts; every physician was for one disease—not more: so that every place was full of physicians; for some were doctors for the eyes, others for the head; some for the teeth, others for the belly; and some for occult disorders. Their number must necessarily have been very great. Herodotus says, παντα δε ιητρων εριπλεα. The Æsculapius of Greece must date at least 1000 years posterior to the Egyptian. The celebrated mythologist, Jacob Bryant, makes him to be the same as Jupiter and Apollo—the same as Osiris, Hermes, Thoth, and Apis the physician. Many temples were dedicated to him in Asia Minor: he had several temples at Pergamus;† and Aristides reports that he was worshipped under the title of Ζευς Ασχληπιος, or Jupiter Æsculapius. At Memphis, the ancient Misr, the capital of Egypt, a live serpent, as the Æsculapian emblem, was kept, and treated with religious reverence. Serpent worship, however, was very general, not confined to one part of the globe, and it may be traced in almost every religion, through ancient Asia, Europe, Africa, and America.‡ The serpent has been employed as the symbol both of Good and Evil: the Egyptians used it as typical of the good demon (Agathodæmon). Thoth is not the only Egyptian deity symbolized by the serpent; Kneph, and Isis, and many others, were also distinguished by it. How the serpent applied to Hygæia, is to be considered as the symbol of

* Euterpe. † Lucian.

‡ See the Rev. J. B Deane's excellent work on the Worship of the Serpent, 8vo. 2d edit. Lond. 1833.

health, is not easy of explanation. Pliny states the reason of its consecration to be from the use formerly made of the flesh of these animals in medicine. But the more probable conjecture is, I think, that which refers it to the renovation of life and vigour, typified by the periodical change of its skin. In the Grecian mythology, as in the Egyptian, the symbol of the serpent is sacred to nearly all the gods and goddesses, to Saturn, Jupiter, Apollo, Bacchus, Mars, Æsculapius, Rhea, Juno, Minerva, Diana, Ceres, and Proserpine.

The Egyptian origin of Æsculapius, and the connexion between the serpent and the god of medicine, are questions of little interest at the present day; but that the hereditary claims of the wise reptile should be still maintained among a people professing the Mohammedan religion, so hostile as it has always been to the least semblance of idolatry, is a remarkable and curious fact, and one which the traveller is surprised to find in the Valley of the Nile, though ever the cradle of superstition, and of so many fables of paganism. The juggling performances of the Háwees, or snake-players, may be traced to the feats of the Psylli; but the object of these, like similar contrivances in India, or the sleight-of-hand of European conjurers, is little more than to obtain money; and whatever notions may be connected with the disgusting ceremony of tearing live snakes with the teeth, during the *Wooled*, or birth-day festival of the Prophet, this is not directly attributable to any superstitious respect for the reptile, nor in in any way referable to the emblem of the son of Apollo.

At the tomb of Shekh Hereédee, in Upper Egypt, the case is otherwise; and the cures believed to be performed there are attributed to the influence or direct agency of a sacred serpent. The name of the saint has extended from his tomb to the whole mountain on which it stands; and between E'Siout and E'Khmim, and nearly opposite Tahta, the projecting corner of the Mokuttum chain, is known by the appellation of Gebele 'Shekh Hereédee. Ascending near the centre of these precipitous cliffs, a celebrated Egyptian traveller informs me, you arrive at a tomb concealed from the view of those below by a projecting eminence, where the saint is said to be buried, and whither the sick are invited, by the well-known reputation of that holy personage and his miraculous powers, to repair, to obtain alleviation of their sufferings. To gain permission to consult him, or rather to invoke his aid, is readily granted by the guardian of the sepulchre, who is, at the same time, supposed to be entrusted with the power and privilege of interpreting his patron's wishes; and the pious devotee anxiously expects the manifestation, or the promises of the saint. An awful silence is preserved; he takes the shoes off his feet, and nothing is heard save the

repetition of the *Fat-hah* (or evening prayer of the Koran), which the supplicant recites at the door of the tomb. At length, the guardian, having a knobbed staff fancifully decorated with tattered shreds of coloured cloth, approaches from the interior of the sepulchre, and unites with him in repeating the Fat-hah. The Shekh is supposed to be propitious—the snake, his emblem, under whose form he is believed to appear, glides from a dark recess—and thus, by his manifestation, having promised the wished-for boon, the credulous man humbles himself before it, and withdraws with the full persuasion of his own incipient cure, or of the recovery of the afflicted friend who had sent him to offer his adoration and presents to the all-potent saint.

The Grecian Æsculapius is generally esteemed as the son of Apollo and the nymph Coronis:—

Υιον Απολλωνος ὀν εγεινατο δια Κορωνις. HOMER.

Pausanias says, no woman of mortal race was his mother: *θνητην γυναικα ἀδεμιαν μητερα.** Coronis was worshipped at Sicyon, where, also, was a temple dedicated to Apollo, in which two live serpents were maintained. The serpent is to be regarded as the ordinary emblem of Æsculapius; but he is frequently depicted with a cock, as typical of vigilance; with an eagle, as denoting judgment and length of life. With the eagle, the head of a ram is also found, the former being placed on the right, and the latter on his left hand. The ram's head is conceived to have reference to the divinations of the deity. The serpent usually entwined around a club, to represent the exercise of prudence and discretion, as necessary to the sustaining of life. But to return to the Egyptians.

The Egyptians have been held forth for their knowledge of Anatomy, Botany, and Chemistry. With respect to the former, it has been inferred, rather than shewn, to have existed from the practice of embalming. The operations, however, embraced in this process, are scarcely entitled to the appellation of dissection; they consisted of little more than an evisceration of the contents of the head, chest, and belly, and a knowledge of the distinctive characters of most of the organs contained in these cavities, would be acquired without the aid of much anatomical research. The *Botanical* knowledge of the Egyptians is entitled to greater distinction. They were well acquainted with the use of various medicinal plants. Pliny, Dioscorides, and Theophrastus, mention several as worthy of notice, and demonstrative of the learning and civilization of the Egyptians.

* L. vii. p. 583.

Their knowledge of *Chemistry* is worthy of consideration. It is evidenced in the embalments; and it has been endeavoured to be shewn that the word, Chemistry, is derived from a hieroglyphical name by which Egypt has been distinguished: *Khemi*, the tail of the crocodile. *Chame* literally means "the black colour."

Bleeding in the veins, and also in some of the arteries, the application of the actual cautery, the administration of enemata, the operation of paracentesis of the abdomen for a dropsy—these are given upon the authority of Prosper Alpinus, a writer of good credit, but probably refer to the more modern practices of the Egyptians.

The engraving which accompanies this sketch is taken from the celebrated statue in the Louvre, where the god Æsculapius is seen attended by Telesphorus, the god of recovery.

Mark Akenside.

MARK AKENSIDE, M.D. F.R.S.

"Quæ tibi, quæ tali reddam pro carmine dona?"—VIRG.

MARK AKENSIDE was a native of Newcastle-upon-Tyne, and born on the 9th of November, 1721. He was the son of a butcher; the recollection of which he was always anxious to suppress. To such an extent did he carry this ridiculous feeling, that, as it is reported, he could never regard a lameness, which impeded his walking with facility, otherwise than as an unpleasant memento of a cut of the foot which he received from the fall of one of his father's cleavers when about seven years of age. His parents were Presbyterians, and strict in the observance of their religious duties. Akenside was destined for the ministry, and placed under the care of Mr. Wilson, a dissenting minister at Newcastle. In a MS. dedication* of his poem, "The Pleasures of Imagination," to his friend, Mr. Jeremiah Dyson, he writes his name *Akinside;* so, also, in his "Ode to the Earl

* Viro conjunctissimo
JEREMIÆ DYSON,
Vitæ, Morumque suorum Duci,
Rerum bonarum Socio,
Studiorum judici,
Cujus Amicitia
Neque sanctius habet quicquam,
Neque optat carius;
Hocce Opusculum
(Vos, ô Tyrannorum impura laudes
Et servilium blandimenta Poetarum,
Abeste procul)
Dat, Dicat, Consecratque
MARCUS AKINSIDE,
xvii Calendas Jan. A. Æ. C. MDCCXLIV.

of Huntingdon;" in his Thesis, and in some of the earlier editions of his works. After the sixth, published in 1763, by Dodsley, (who purchased the MS. of the poem for the sum of £120, a very large price in those days, and only given, on this occasion, upon the opinion and advice of Pope, who told the bookseller that the author was "no every-day writer,") he is printed Akenside. His genius for poetry manifested itself at an early age. When only sixteen years old, he sent to the Editor of the Gentleman's Magazine a poem, written after the manner of Spenser, entitled, "The Virtuoso," in which there is exhibited much of the future talent and power of the author. "A Rhapsody on the Miseries of a Poet born to a low Estate," and a Fable illustrative of Content and Ambition, followed—and preceded that which may, perhaps, be pronounced one of the finest didactic poems in the English language, and upon which the poetical character of the author may safely rest.

Akenside entered himself a pupil in medicine at Edinburgh, in his nineteenth year, and then most honourably returned a sum of money he had received from the Dissenter's Society, which it was customary for them to allow to young men destined for the ministry. He resided in Edinburgh for two years, and was very zealous in the pursuit of medical knowledge. He became a member of the Medical Society, and particularly distinguished himself by his oratorical powers. Dr. Robertson told Dr. Stewart, the author of the Elements of the Principles of the Human Mind,* that he was frequently led to attend their meetings chiefly to hear the speeches of Akenside. The "Hymn to Science," was written at Edinburgh; also the "Ode on the Winter Solstice." The former has passages of extraordinary merit and beauty:—

"That last best effort of thy skill,
To form the life and rule the will,
Propitious Power! impart.
Teach me to cool my passion's fires,
Make me the judge of my desires,
The master of my heart.

"Raise me above the vulgar's breath,
Pursuit of fortune, fear of death,
And all in life that's mean;
Still true to reason be my plan,
Still let my actions speak the man,
Through every various scene."

Stanzas 12 and 13.

* III. 501.

From Edinburgh he removed to Leyden, then the great seat of medical science. Here, it is probable, he began to methodize his great poem. Here, also, he wrote many minor pieces: "Hymn to Cheerfulness, &c.; and having studied for three years, he took his degree of Doctor of Physic, May 16, 1744, and on this occasion wrote a Thesis on the "Origin and Growth of the Human Fœtus" (De Ortu et Incremento Fœtus Humani), which was inscribed to Dr. Richard Mead.*

"The Pleasures of Imagination" was published in 1744, and immediately procured for its author, who had not yet reached his twenty-third year, a niche in the Temple of Fame. Akenside and Armstrong, both "twofold disciples of Apollo," published their chief works in the same year; and it has been well observed,† that, "they appealed to the consent of mankind in opposite directions;" for, "The Pleasures of Imagination" is rich in materials, and brilliant in imagery and versification; whilst the "Art of Preserving Health" is remarkable for its simplicity of style, and a total rejection of ornament. As poets, they eminently excelled—as physicians, they to no great extent succeeded; not from lack of medical knowledge, or zealous attention in its pursuit—but literary exertions have, most unaccountably, always been looked upon as incompatible with the duties of an arduous profession.

"The Pleasures of Imagination" has been translated into other languages: —into French, by the Baron d'Holbach; and into Italian, by the Abbati Angelo Mazza. Neither of these translations do justice to the original. The extraordinary condensation of the subject matter of the poem, will satisfactorily account for these failures.

Akenside started as a physician at Northampton, where he resided for about a year and a half only, the chief practice being engrossed by Dr. Stonehouse. During this time he probably composed many of his Odes. He came to London under the protection of his generous friend, Mr. Dyson, afterwards Clerk of the House of Commons; resided at North End, Hampstead; and frequented the clubs and assemblies of the metropolis. About 1747, he took up his abode in Bloomsbury Square, where he continued for the remainder of his life. He was admitted, by mandamus, to a Doctor's degree at Cambridge; he was chosen a Fellow of the Royal Society; and elected a Fellow of the Royal College of Physicians. Mr. Dyson assigned to him an annual income of £300, to enable him to make his way as a phy-

* According to Chalmers, he also took a degree at Edinburgh; but I am disposed to think this a mistake.

† Bucke's Life of Akenside, p. 30.

sician. This liberal man and constant friend is alluded to by the poet in the beautiful Invocation to his poem:—

——— "O, my faithful friend!
O early chosen, ever found the same,
And trusted and beloved! Once more, the verse
Long destined, always obvious to thine ear,
Attend indulgent: so in latest years,
When time thy head with honours shall have clothed,
Sacred to even virtue, may thy mind,
Amid the calm review of seasons past,
Fair offices of friendship, or kind peace,
Or public zeal:—may then thy mind, well pleased,
Recall those happy studies of our prime."

Akenside became a candidate for the situation of physician to the Charter House, but was unsuccessful. In July, 1755, he was appointed to deliver the Gulstonian Lectures before the Royal College of Physicians. These have not been printed. The subject selected was the Function of the Lymphatic or Absorbent System. The real constitution of this system was unknown until a comparatively late period. Galen, and the ancients, looked upon the lymphatics as forming a part of the sanguiferous, or rather venous, system: hence the opinions relative to venous absorption; in support of which the illustrious names of Ruysch, Boerhaave, Meckel, Swammerdam, and Haller, may be cited. Dr. William Hunter and Dr. Monro (secundus) have denied, altogether, the doctrine of venous absorption, and contended for the sole power of the lymphatics in the performance of that important function. The controversy between Hunter and Monro, for the priority in the promulgation of this opinion, is well known; but it will appear that Akenside is entitled to this distinction, since his opinions were delivered before the Royal College of Physicians in 1755, whereas those of Hunter and Monro did not appear until 1757. It is reasonable to presume that Akenside had the Extracts from his Gulstonian Lectures read at the Royal Society, and inserted in the Philosophical Transactions,* in consequence of this dispute; and adopted this method of laying his claim to the doctrine, though he carefully abstained from any notice of the pretensions of others. In these "Extracts" he states his objections to the doctrine of Boerhaave and the mechanical philosophers, and advocates the independency of the lymphatic system.†

* Vol. L. p. 322. Read Nov. 10, 1757.

† The insertion of these Extracts occasioned Dr. Monro to attach a postscript to his "Observations, Anatomical and Physiological." Upon which Akenside, according

In January, 1759, Akenside was chosen Assistant Physician to St. Thomas's Hospital; and in two months afterwards one of the physicians. He was also, in the same year, appointed Assistant Physician to Christ's Hospital; by which it would appear that his character as a physician, in London, must have been by this time established. In 1761, through the interest of Mr. Dyson, he was appointed one of the physicians to the Queen. Akenside was associated with two most distinguished physicians at St. Thomas's Hospital—Drs. Russell and Grieve. It is very much to be lamented that we have so few personal accounts of Akenside. Mr. Dyson, who could have said more upon the subject than any one else, is remarkably silent on this head. He has not, indeed, "revealed a solitary feature in the character of the poet." The late Dr. Lettsom was a pupil at St. Thomas's Hospital in the year 1766; and, in a MS. in the possession of the writer of this sketch, he has drawn the characters and depicted the conduct of his teachers. The picture is unfavourable to Akenside, who is stated to have been most supercilious and unfeeling. "If the poor affrighted patients did not return a direct answer to his queries, he would often instantly discharge them from the hospital. He evinced a particular disgust to females, and generally treated them with harshness.* It was stated, that this moroseness was occa-

to Chalmers, printed some remarks in 1756. I have not been able to meet with these in any library, public or private. At all events, they could not have been printed before 1758.

* Many passages from the writings of Akenside might be quoted in contradiction to this statement; which, however, as far as regards the testimony of Lettsom, is unquestionable. In the ode, "At Study," we read—

"Love is native to the heart,
Guide its wishes as you will,
Without love you'll find it still
Void in one essential part."

Again:—

"Though the day have smoothly gone,
Or to letter'd leisure known,
Or in social duty spent,
Yet, at eve, my lonely breast,
Seeks in vain for perfect rest,
Languishes for true content."

In another place he depicts woman—

——— "powerful with beaming smiles,
Chief of terrestrial nature!"

sioned by disappointment in love; but hapless must have been that female who should have been placed under his tyranny." Lettsom was inexpressibly shocked at an instance of Dr. Akenside's inhumanity, exercised towards a patient in Abraham's ward, who had been ordered bark in boluses; who, in consequence of not being able to swallow them, so irritated Akenside, as to order the sister of the ward to discharge him from the hospital; adding, "He shall not die under my care." As the sister was removing him, in obedience to the Doctor, the patient expired.

"One leg of Akenside was considerably shorter than the other; which was in some measure remedied by the aid of a false heel. He had a pale, strumous countenance, but was always very neat and elegant in his dress. He wore a large white wig, and carried a long sword." Lettsom never knew him to spit; nor would he suffer any pupil to spit in his presence. One of them once accidentally did so, yet standing at some distance behind him; the Doctor instantly spun round on his artificial heel, and hastily demanded who was the person that spit in his face. Sometimes he would order some of the patients, on his visiting days, to precede him with brooms, to clear the way, and prevent the patients from too nearly approaching him. On one of these occasions, Richard Chester, one of the Governors, upbraided him for his cruel behaviour: "Know," said he, "thou art a servant of this charity." On one occasion his anger was excited to a very high pitch, by the answer which Mr. Baker, the surgeon, gave to a question the Doctor put to him respecting one of his sons, who was subject to epilepsy, which had somewhat impaired his understanding. 'To what study do you propose to place him?' said Akenside to Baker. 'I find,' replied Baker, "he is not capable of making a surgeon, so I have sent him to Edinburgh to make a physician of him.' Akenside turned round from Baker with impetuosity, and would not speak to him for a considerable time afterwards.

"Dr. Russell was as condescending as Akenside was petulant. Akenside, however, would sometimes condescend to explain a case of disease to the pupils, which always appeared sagacious; and, notwithstanding his irritable temper, he was more followed than Russell by the pupils.

"Dr. Grieve lived in the Charter House, to which he was physician. He was an amiable man, and an unassuming scholar. He was the translator of Celsus."

Mr. Meyrick's testimony is much in accordance with that of Dr. Lettsom. Mr. M. was a surgeon and apothecary; and frequently called in Akenside, with whom he was in habits of intimacy. "We were not very much like, either (says Mr. M.); for he was stiff and set; and I, all life and spirits. He

often frowned upon me in a sick-room. He could not bear to see any one smile in the presence of an invalid; and I think he lost a good deal of business by the solemn sententiousness of his air and manner. I wanted to cheer patients up!"*

One year after his appointment to St. Thomas's Hospital he was chosen to deliver the Harvæian Oration at the Royal College of Physicians; and it was published, by Dodsley, in 1760, with a dedication to the President, Dr. Reeve. From this time to the period of his death he published various papers in the Philosophical Transactions, the Transactions of the Royal College of Physicians, and separate tracts. He communicated, in 1763, to the Royal Society, the account of a very curious case of an "Affection of the Heart," which appeared to be the result of a blow received six months previous to death, and which drove the edge of a plate forcibly between the ribs. The appearances, upon dissection, warranted the opinion of Dr. A. as to the cause of death; but there is mention made of the patient having been crippled with rheumatism a year previously to the accident, which the researches of modern practitioners would tend to shew had some connexion with the case. He also printed "Observations on Cancers," and "On the Use of Ipecacuanha in Asthmas;" also, a "Method of treating White Swellings of the Joints;" all of which are among the papers contained in the first volume of the Transactions of the Royal College of Physicians.† The style of those papers is lucid, and entirely devoid of affectation; plain, concise, and unassuming. His doctrine, in the paper on Cancers, will not be admitted in the present day; and the remedy recommended by him (the hemlock, as lauded by Dr. Storck of Vienna,) in this disorder, has been too frequently employed without any beneficial effect. The value of Ipecacuanha, in some cases of asthma, is now generally admitted. The remarks on the use of blisters in white swellings of the joints, are judicious. His principal medical work is entitled, "De Dysenteria Commentarius," and was published in 1764. It was well received; and translated by Dr. Ryan in 1766, and by Mr. Motteux in 1768, though neither of these versions do justice to the original. The Latinity of the Harvæian Oration and the work on Dysentery is much esteemed for its purity and elegance. The medical character of Akenside may be estimated by

* Bucke's Life of Akenside, p. 29.

† Akenside read some observations on the "Putrid Erysipelas" before the College, which were intended to have been printed in the second volume of the Transactions. He had them home, for the purpose of correction, at the time of his decease, and they were never returned to the College.

this latter publication. It is a clear and succinct account of the disease, much more satisfactory than any that had preceded it; and the mode of treatment, by the exhibition of Ipecacuanha, has been adopted to the present time. Few diseases have attracted more the attention of medical practitioners; but it is only of late years that the necessary distinctions have been made of its several types, and the varied measures necessary for their cure. The opinion now entertained of the disease, is that of its being an inflammatory action seated in the mucous membrane of the intestines, chiefly of the larger ones, and producing more or less constitutional disturbance, according to the extent of the disease. Akenside does not look upon dysentery as an inflammatory disorder; and he assumes this point from the circumstance that often there is very little fever attending the disease; which, he observes, is not the case in an inflammation of the bowels. No distinction, in his time, was made between inflammation affecting the serous or the mucous surfaces of the intestines; nor were the symptoms indicative of either, then discriminated. Modern practitioners have marked these, and the disease is consequently much better understood than formerly. It is unnecessary to dwell longer on this topic than to say, that the remedy most approved by Akenside is that which, indeed, seems best calculated to afford relief to most of its stages and conditions, and to be extensively used at the present time.

Akenside was appointed to deliver the Croonian Lectures at the Royal College of Physicians; and he singularly made choice of a subject, though connected with medicine, yet in a very partial degree; and, after having delivered three lectures on the "History of the Revival of Learning," he discontinued the course; the subject being considered by the Fellows as foreign to the intention of the founder of the lectures and the purposes of the institution. These appear to have been his concluding medical labours (if such they may be called); for shortly after, namely, on the 23d of June, 1770, his death took place, occasioned by a putrid sore throat. He was buried in St. James's Church; and he left all his effects, books, &c., to his constant friend Mr. Dyson.

Thus died Akenside, in the 49th year of his age—in the full possession of his intellectual powers—surrounded by numerous friends, of great excellence and high character—in the enjoyment of a select, not an extensive, practice—and celebrated as a poet, a philosopher, and an elegant scholar. His critical powers were highly estimated by his contemporaries and by the public; yet he does not appear to have enjoyed any particular intimacy with the poets of his day, among whom are to be found Armstrong, Thomson, Young, Glover, Somerville, Collins, Lyttelton, Gray, Mason,

Butler, and others. His manners seem to have been solemn and reserved, and his temper irritable; but there is scarcely reason to question the benevolence of his heart. George Hardinge says, "He had, in general society, a pomp and stiffness of *manner*, not of *expression*—in which last he was no less chaste than flowing and correct. But the misfortune of this *manner* was in some degree connected with his figure and appearance. He looked as if he never could be *undressed;* and the hitch in his gait, compared with a solemn cast in his features, was, at the best, of a kind that was not companionable, and rather kept strangers at a distance from him. Though his features were good, manly, and expressive, a pale complexion of rather a sickly hue, and the laboured primness of a powdered wig in stiff curl, made his appearance altogether unpromising, if not grotesque. But, where he was intimate, was admired, and was pleased with his party, he conversed most eloquently and gracefully."* He was not a wit, and had no patience for jests. He is said to have been of the absurd opinion of Lord Waldegrave, that "a true gentleman never jests." He had great satirical powers, as his Epistle to Curio manifests This is a severe invective on Mr. Pulteney, afterwards Earl of Bath. In this Epistle, Akenside severely reproaches him for his treachery; and represents, in lively colours, the charms of freedom and virtue, and the infamy attendant upon principles founded on despotism and slavery.

In early life Akenside was distinguished by his oratorical powers, his historical knowledge, and his philosophical taste. His memory was very powerful. It is said† that, in the society of those mild and gentle spirits who admired his genius and respected his virtues, he was kindness itself. His language flowed chastely, gracefully, and eloquently; and his varied knowledge, argumentative reasonings, and nice distinctions, his fine appreciation of philosophical allusions, and keen relish for the beauties of the creation, would display themselves in pure and copious streams of eloquence, never, perhaps, surpassed by the greatest masters of social life the world ever knew. His life is marked by a course of undeviating rectitude. His love of liberty, his hatred of tyranny, bigotry, and hypocrisy, constant; his admiration of virtue and integrity, exalted and uniform. His politics may be gathered from his "Ode to the Earl of Huntingdon," one of his finest compositions. As an English lyric poem, it stands pre-eminently great. Akenside must be regarded as a Whig. He espoused the principles of the Revolution. He was not a republican. He equally detested tyranny and bigotry. His great poem demonstrates this in every page. He was a

* Nichols's Literary Anecdotes, vol. viii. † Bucke, p. 221.

great admirer of the writings of Plato, Cicero, and other ancient philosophers; and his religious opinions were probably influenced by the estimation in which he held these great authors of antiquity. He is to be looked upon as a Theist. Religion was a subject upon which he seldom conversed. From various passages in his writings, it is manifest he had great reverence for the Christian doctrine. The wisdom and benevolence of the Deity are constant themes for the veneration of the poet throughout the "Pleasures of Imagination." Mr. Bucke has given an extract* from a letter of Akenside's, supposed to have been addressed to Dr. Grainger, so highly commended by Dr. Percy, Bishop of Dromore, and which, after noticing the various opinions that have been entertained by philosophers respecting the nature of the human soul, concludes thus:—"It is a great satisfaction, however, that we live in a world presenting, every moment, something to exercise our faculties; and that the Grand Mover of the whole will, no doubt, make ample allowances for human infirmity." The fame of Akenside, it must be obvious, rests more upon his poetical than his medical character. The excellence of his "Pleasures of Imagination" is universally admitted; though differences of opinion, as to its particular merits, have been entertained. Cooper† regards it as "the most beautiful didactic poem that ever adorned the English language." The writers of the Biographia Britannica look upon it as "a noble and beautiful poem; exhibiting many bright displays of genius and fancy, and holding out sublime views of nature, providence, and morality." Dr. Johnson says, "I could not read it through." His opinion of the Odes was not more favourable:—"One bad ode may be suffered; but a number of them makes one sick." But Akenside, be it remembered, was a Whig; and Johnson carried his strong prejudices, theological and political, into nearly all his criticisms.

It was the intention of Akenside to correct, or rather re-write, his "Pleasures of Imagination." He printed the first and second books, and transcribed a portion of the third; and he also wrote an introduction to an intended fourth book. Those have been published by Mr. Dyson; who considered them too valuable, even in their imperfect state, to be withheld from the public. Mr. Pinkerton became the possessor of Akenside's copy of his original poem with his marginal alterations, many of which are great improvements. Mr. P. put these in a collection of "Letters of Literature, by Robert Heron, Esq." 8vo. Lond. 1785.

The Portrait accompanying this Memoir was painted by Pond when the poet was in the thirty-fifth year of his age. The Autograph is from the statute-book of the Royal Society.

* Life, p. 181. † Letters on Taste.

B. S. Albinus.

à Leide ce 5 Juillet 1726.

BERNARD SIEGFRIED ALBINUS, M.D.

"Omni miraculo quod sit par hominem majus miraculum est homo."
St. August. de Civit. l. 10, c. 3.

Bernard Siegfried Albinus was the son of an eminent physician, Bernard Albinus, and a professor at the university of Leyden. He was born at Frankfort, Feb. 24, 1697 He was instructed in latin by Sommers and Nesterhoff; in philosophy, by Person and Gronovius; and professionally educated by his father, by Rau, Bidloo, Decker, and Boerhaave. In 1718 he visited Paris, and made the acquaintance of Winslow and Senac. At the expiration of six months he was recalled to Leyden, in consequence of the death of Rau, and was appointed his successor as teacher in anatomy and surgery; and he received a degree of Doctor of Medicine without examination. Upon the death of his father, in 1721, he was chosen to succeed him as professor of anatomy; and upon his admission to the chair, he read a paper, entitled, "De Vera Via ad Fabricæ Humani Corporis Cognitionem ducente," in which he forcibly demonstrated the importance of Comparative Anatomy; and by the excellence of this installation address, he obtained much reputation.

His first publication, in which he pays a just and elegant tribute to the memory of his teacher and predecessor, Rau, was made in 1725, under the title of "Index Supellectilis Anatomiæ Ravianæ." The following year he put forth his well-known work on the Bones, which was reprinted in 1762, accompanied by plates of extraordinary fidelity and elegance. His "Historia Musculorum Hominis" appeared in 1734. The descriptions are most faithful, and the plates wonderfully accurate. Haller declared this work to be "the best ever executed in anatomy." To these publications succeeded his "Dissertatio de Arteriis et Venis Intestinorum Hominis," in 1736, accompanied by a coloured plate, shewing the anastomosis of the arteries; and his tract "De Sede et Causa Coloris Æthiopum," appeared in 1737. Also his "Icones Ossium Fœtus Humani" with a brief history of the growth of bone.

In 1741 he published "Explicatio Tabularum Anatomicarum," and in 1744 the plates of Bart. Eustachius, with explanations. He published "Tabulæ Sceleti et Musculorum Corporis Humani," in 1749, in large folio, at London. He published also "Annotationes Academicæ" in 1760, in four vols. 4to. which are illustrated by beautiful plates; and he likewise edited the works of Harvey, Vesalius, and Fabricius de Aquapendente. These various publications are held in high esteem to the present day, and the fidelity of the delineations and descriptions is universally allowed.

Albinus is to be regarded as the first anatomist of his age, and he held the chair of anatomy at the university of Leyden during nearly fifty years. He died Sept. 9, 1770, at the age of 73 years. His zealous application to anatomical researches is perhaps to be attributed to his being a strong advocate of the mechanical theory of Boerhaave. In accordance with this doctrine, he necessarily devoted himself to the study of minute anatomy. He is one of the first to have followed up the views of his celebrated teacher, and to have noted with great precision the intimate structure and disposition of the several parts of the human body. No other individual can be said to have paid equal attention to the arts of design, to illustrate his works. He took uncommon pains to ornament and render attractive his various anatomical productions, but he is never found to have sacrificed the truth of nature to the beauty of delineation.

The autograph of B. S. Albinus is of very great rarity. I am assured by the director of the Anatomical Collection at Leyden, of which Albinus was himself, for many years, the conservator, that among all the documents belonging to that department, it is not to be found. I have, however, been fortunate enough to meet with a Letter of this celebrated Anatomist, addressed to Dr. Robert Nesbitt, the author of a well-known work on Osteogeny. The letter announces the transmission of copies of the second volume of Albinus's edition of the Works of Vesalius to Dr. Nesbitt, Mr. (Dr.) Mead, Mr. Douglas, Mr. Cheselden, and Mr. Barrett. The signature affixed to the portrait of Albinus is taken from this letter. The fac-simile of his writing given beneath the autograph is taken from a MS. entitled *Prima Delineationes Tabularum Sceleti et Musculorum Corporis Humani*, in the library of the Leyden University, and may be depended upon as the genuine handwriting of this celebrated professor.

Yours · Richard

MARIE FRANÇOIS XAVIER BICHAT, M.D.

"Oh early ripe! to thy abundant store,
What could advancing age have added more?"

DRYDEN.

XAVIER BICHAT was born on the 11th of November, 1771, at Thoirette, in the department of the Ain. His father, Jean Baptiste, was a Doctor of Medicine of the University of Montpellier; and to his instruction, Xavier Bichat's early knowledge of medicine is to be attributed. He is said to have distinguished himself among his fellow-collegians, in the common course of study; and he is noticed as having been especially versed in the Latin language, and to have excelled in the mathematics. Natural history was also with him a favourite pursuit. He received his anatomical instruction at Lyons, and was remarkable for his general views of the science, for new methods of treating which, he was afterwards so peculiarly characterised. At this time the study of surgery had acquired a preponderating influence, owing to the deserved celebrity of Desault. To this science, Bichat first applied himself, and studied under the chief surgeon of the Hôtel Dieu of Lyons, Marc Antoine Petit. The revolution obliged Bichat to quit Lyons for Paris, where a larger field, and one more adapted to his powers, was presented. At this time his views were directed to military surgery. He accordingly attended the Hôtel Dieu of Paris, and heard the lectures of Desault. An exceedingly instructive practice was established among the attendants of this surgical course: pupils were selected to make an abstract of the lecture of the day, and this was delivered in the presence of the second surgeon. An accident in a great measure determined the future fortunes of Bichat, for the pupil whose turn it was to have delivered the abstract of a long and important lecture on the fractures of the clavicle, being absent, Bichat offered to supply his place. He was blessed with a powerful memory, and Buisson tells us, that his abstract created the most lively sensation; the purity of his style, the precision, the clearness of his ideas, the scrupulous exactness of his conclusions, announced the pro-

fessor, rather than the scholar. He was heard with much attention, and retired from the theatre applauded and admired. Intelligence of this talented display reached the ears of Desault, through his colleague Manoury; upon which he desired to be made acquainted with Bichat, and was delighted with his sagacity. It is highly creditable to the character and to the judgment of Desault, that he immediately offered to direct his studies, to receive him into his house, and to treat him as a son. The foundation for his future reputation was laid. Desault took him every where, to his public and his private patients. Bichat became his assistant at his operations, and was also engaged in the prosecution of his patron's literary labours. No individual could possibly devote himself with greater ardour to acquire information, than Bichat; it knew no bounds, he acknowledged no obstacle; by incessant application he accumulated an extraordinary fund of information, which was highly important, as it enabled him to hold up against the almost sudden death with which Desault was attacked in 1795.*

Bichat was now left to depend upon his own resources, and his views began to be developed. In the winter of 1797, he commenced his career as a lecturer, and, not calculating upon a large class, he restricted himself to a small suite of chambers. He had not even a dissecting-room; he confined himself to simple demonstrations; but in these his physiological views extended so naturally from the great discoveries he had made, the result of his genius and observation, and the experiments he performed upon living animals, to demonstrate their truth, excited attention, though not in a degree sufficient to suppress a charge of rashness, when he announced a course of operations at the end of his anatomy; a proceeding at that time very unusual, and only undertaken by the most practised surgeons. His success, however, was complete; but the labour attending such exertions undermined his health, and the necessity of frequent speaking produced a dangerous attack of hæmoptysis. Having somewhat recovered from this, he established a theatre for dissections, which was attended by upwards of eighty pupils. He dissected for the lectures himself, performed his experiments on living animals, and retired in the evening fatigued by the exertions of the day, almost overcome with lassitude and languor—but not to rest; he was engaged, during a great part of the night, in putting Desault's surgical works into proper order, and thus manifested his gratitude to his friend and patron.

* In the fourth volume of the Journal de Chirurgie, Bichat paid a deserved tribute of gratitude to his master and friend.

When we consider that every part of the human body has been most minutely examined, and as minutely described, we may reasonably despair of arriving at any further knowledge on the subject. Any new view, therefore, of the structure of the frame, founded on just observations, entitles its author to the gratitude of posterity. Bichat's system of anatomy, and his mode of considering the subject, originated in his views directed to the membranous system. The observation of M. Pinel, that disease consisted of an alteration in the *tissue* of an organ, seems to have given to Bichat the idea of studying anatomy by a separate consideration of those structures which enter into the formation of the different parts. Pinel profited much by these anatomical researches, as, in a subsequent edition of his *Nosographie Philosophique*, whence the observation referred to was made, he has corrected his classification of the diseases of the fibrous, synovial, and cellular systems.

Bichat's examination of the synovial membranes led him to inquire with the same spirit into all other parts of a similar tissue, and ultimately produced his arrangement of the membranes according to their intimate organization, which must be regarded as one of the most complete systems of classification of the kind that has ever been made. Prior to the time of Bichat, the membranes had not formed any special subject of investigation; they had been examined and described in connexion with the different organs, but never independently of their association with other parts. From the days of Haller to this time, the whole of the membranes were referred to a common origin, and this was traced to the cellular membrane. Bichat saw that, however true in a general relation this arrangement might be, yet that, upon examination, it was found to be under various circumstances very erroneous. He is the first author who has ventured to treat of the subject under different points of view, and he has considered them in relation to their form, organization, vital properties, functions, and sympathies, and classed them in the following manner:—1. *Mucous membranes.* 2. *Serous membranes.* 3. *Fibrous membranes.* These are the simple membranes. Then come the compound, being either—1. *Sero-fibrous;* 2. *Sero-mucous;* or, 3. *Fibro-mucous.* There are also membranes, *contre nature*, or *accidental membranes.* The *Arachnoid* and the *Synovial* form also separate divisions from the little knowledge at present possessed of their organization. Abandoning artificial methods, Bichat had recourse to nature for the establishment of his classification, and has seen grounds for the arrangement in a conformity of structure, and a similarity in the functions of the parts embraced in these divisions. He thus divided them according to the nature of their tissues, their extent, and their uses, and

shewed their mode of distribution, and classed them in the most ingenious manner. Their intimate structure he fully developed—he sought into their nature, the degrees of vital force possessed by them; this he demonstrated by experiments on living animals, and in this way he elucidated the diseases with which they severally may be affected. Anatomy, physiology, and pathology have been all equally advanced by the labours of Bichat, and the improvements in these departments of science during the last half century are in no little degree attributable to the researches and classifications of this able philosopher. The whole of his views on this subject have been published in a distinct treatise, entitled, *Traité des Membranes.* The first edition was published in 1800. The 2d volume of the *Mémoires de la Société Médicale d'Emulation*, of which Society he was an active and zealous member, and one of the founders, contains his early papers upon this important subject. Three other memoirs by Bichat are inserted in this work; the first on a new trepan, so arranged as to elevate or depress the crown at pleasure by means of a screw; the second, on the impossibility of any displacement occurring when the humeral extremity of the clavicle is fractured; hence the inutility of Desault's bandage: and the third, on a new manner of removing polypi by the ligature.

We must now look at Bichat as a physiologist. His proposed distribution of the two lives of an animal must be looked upon as the foundation of his labours in this department. He says, there is an *organic* life, and an *animal* life. These have their seats in the ganglions, and in the brain. The statement upon this subject will be found in his *Recherches sur la Vie et la Mort*, published in 1799. This work is divided into two parts, one containing the general exposition of his physiological views, the other demonstrating the connexion which exists between the three principal organs of life, the brain, heart, and lungs. The whole work cannot fail to excite the admiration of the reader, although he may not be prepared to admit, to the full extent, all the opinions advanced by the author on the subject of life. Bichat indeed proposed, in a second edition, making several alterations, and giving to the whole a greater degree of precision. He demonstrated the connexion of life with respiration, and showed that black as well as red blood was capable of exciting the contractions of the left cavities of the heart, and he showed that the red blood only was calculated to produce the necessary changes in the tissue of organs for the maintenance of life.

The *Traité des Membranes*, and the *Recherches Physiologiques sur la Vie et la Mort*, rendered an entirely new system of anatomy necessary, and this extraordinary work was effected in the *Anatomie Générale.* Bichat

arranged the various organs of the body as comprised in twenty-one different tissues:—1. *the cellular system;* 2. *the nervous system of the animal functions;* 3. *the nervous system of the organic functions;* 4. *the arterial;* 5. *the venous;* 6. *the exhalent;* 7. *the absorbent;* 8. *the osseous;* 9. *the medullary;* 10. *the cartilaginous;* 11. *the fibrous*; 12. *the fibro-cartilaginous;* 13, 14. *the muscular of the animal and the organic functions;* 15. *the mucous;* 16. *the serous;* 17. *the synovial;* 18. *the system of the secreting glands;* 19. *the dermoid;* 20. *the epidermoid;* 21. *the pilous system.* Of these he made two classes: 1. the common or generating systems distributed throughout the body, and entering into the composition of the other tissues; and, 2. the organic tissues found only in certain and determinate situations, and never contributing to the organization of each other, or of the general tissues. Of the former are, the cellular, arterial, venous, exhalent, absorbent, and nervous; and of the latter, the osseous, cartilaginous, fibrous, and muscular systems. Although this arrangement cannot be looked upon as perfect, or free from objection, it is not a little remarkable, that no system since offered, although formed principally on the basis of that of Bichat, has been well received by anatomists and physiologists.

This great undertaking is said to have been composed in the course of one year, (printed chapter by chapter as it was written,) a circumstance almost incredible, when the other labours of Bichat in teaching, dissecting, &c. are considered. A system of descriptive anatomy (*Traité d'Anatomie Descriptive*) followed. The first two volumes were published by Bichat; the remaining three volumes were left imperfect, but have been completed and published by Buisson and Roux. Then an edition of the works of Desault, with many additions by the editor. He was also engaged in preparing a system of pathological anatomy, founded upon his experiments on living animals, containing researches of the deepest interest and the greatest ingenuity.

Bichat was appointed physician to the Hôtel Dieu in 1800, the duties of which were considerable. He did not, however, allow them to interfere with his other engagements, nor did he show any neglect in the performance of what was required of him at the hospital. In giving clinical instruction, he is described as pre-eminent—the pupils regarded his opinions as oracles, and treasured them up accordingly. He was indefatigable in the examination of the bodies of those who died under his care, and also of that of his colleagues. He is said to have examined upwards of six hundred bodies during one winter; and by this, his store of pathological information was greatly increased. He was able to show the correctness of his views

relative to the independence of the tissues by investigating the diseases with which they were separately affected, and to this method much of the precision of modern pathology must unquestionably be attributed. He even contemplated a new classification of diseases. The Materia Medica formed also a subject of Bichat's attention. His appointment to the Hôtel Dieu enabled him to prosecute this branch of science. He felt the necessity of classing medicines, from the influence which they exercise over the vital properties; and he was desirous of demonstrating their sympathetic and direct actions upon the different organic systems. He was assisted in this important and difficult inquiry by no less than forty pupils, who, under his directions, gave daily reports upon the same, the progress of which was announced in a regular public lecture delivered daily by Bichat. Pairier, in his "Dissertation sur les Emétiques, précédée de considerations générales sur la matière medicale," Paris, 1805, 8vo., and Gondret, in his "Dissertation sur l'action des Purgatifs," Paris, 1803, 8vo., have given some of Bichat's views on the subject of the materia medica generally.

But the labours of Bichat were to be brought to a close. Death, whose nature, physically speaking, he had so well described, was now to visit him. He sustained a fall in descending a staircase at the Hôtel Dieu, from a room in which he had been for a considerable time examining preparations in maceration, and from which, of course, putrid emanations were being sent forth. He was taken up suffering under a slight concussion of the brain, and he was much bruised. He was subject to a disordered condition of the stomach and bowels; fever succeeded; his usual gastric derangement ensued; he became comatose, and died on the fourteenth day of the disease, on the 22nd of July, 1802, in the 31st year of his age. That any one should have accomplished so much, and of such a nature, so original, so vast, so practical, and, it may be added, so perfect, in such a short period of existence, is only to be attributed to the possession of genius, accompanied by the most patient and indefatigable industry. He may be said to have purchased learning at the expense of the richest soil of human happiness, and, having impaired his health, prematurely deprived society of a man whose greatest fault was, an activity of mind disproportionate to his strength.

"Upon such sacrifices
The gods themselves throw incense."

LEAR, Act v. scene 3.

The period of his life was no doubt curtailed by his great exertions; but if the age of a man is to be estimated by what he has done, rather than the number of years that have passed over his head—and Lord Bacon tells

us, "a man that is young in years, may be old in hours, if he have lost no time"—then Xavier Bichat had attained an extreme longevity.

> "That life is long, which answers life's great end,
> The time that bears no fruit, deserves no name;
> The man of wisdom is the man of years."
>
> YOUNG.

His works will live, though their author be no more; but his memory will ever be cherished as one of the benefactors of the human race. Deeply to deplore the death of any individual occurring in the meridian of life, and in the midst of his sphere of usefulness, is, perhaps, a just as it is a natural consequence of such an event; but how much is the intensity of this feeling increased, when the subject of it is one by whose exertions mankind have been so greatly benefited. Bichat fell a victim to his zeal for science and his profession, and died in the height of his prosperity and reputation. No one was ever more sincerely mourned; his loss was a national one, and such it was felt to be. Corvisart communicated the intelligence of the death of Bichat to the first consul, Napoleon Buonaparte, in the following words: "Bichat vient de mourir sur un champ de bataille qui compte aussi plus d'une victime: personne en si peu de temps n'a fait tant de choses et aussi bien." Ten days after this, the government caused his name to be inscribed, together with that of Desault, on a memorial erected at the Hôtel Dieu in honour of these most distinguished men. The following is the inscription:

> "Ce Marbre dédié à la Mémoire des Citoyens DESAULT et BICHAT a été posé pour attester la reconnoissance de leur contemporains, pour les services qu'ils ont rendus, le premier à la Chirurgie Françoise dont il est le restaurateur, le second à la Médecine qu'il a enrichée de plusieurs ouvrages utiles, et dont il eût aggrandi le domaine si l'impitoyable mort ne l'eût frappé dans sa 31 année."

More than five hundred students followed Bichat's remains to the tomb, and M. Le Preux pronounced a discourse at his interment.

The life of Bichat has been written by Buisson and by Husson. An historical notice has also been published by Sc. Pinel. Hallé delivered an *Eloge* before the Faculty of Medicine of Paris; and Sue, at the commencement of his course of Medical Bibliography.

In all the relations of life, Bichat was most amiable. He was a stranger to envy, or any other hateful passion. Modest in his demeanour, but lively in his manners, which were open and free. He was much beloved. To his

father he was most devotedly attached, and to him his work is dedicated in the following simple but expressive manner: "*A mon Père et mon meilleur Ami.*" He was of middling stature, and his countenance was agreeable; his eyes were piercing and expressive. The portraits of him generally fail of giving a precise resemblance; that which accompanies this memoir is admitted, by all who knew him, to be the best likeness, and in every point satisfactory.

His head was very remarkable, and Cloquet (Traité d'Anatomie, tom. i. p. 82, planche xxix.) has given a representation of his skull, as a specimen of the Caucasian variety of the human race. It is singularly irregular as to its formation, the left side projecting much beyond that of the opposite. The sutures are also irregular, and the defect of symmetry is as evident in the interior as it is on the exterior of the skull. The forehead is particularly large and capacious.

It is scarcely necessary to remark, that the works of Bichat have been translated into various languages, and have gone through many editions. They may be arranged in the following order:

1. Notice Historique sur Desault, Paris, 1795, 8vo.
2. Description d'un nouveau Trepan, Paris, 1799, 8vo., in the Mem. de la Soc. Med. d'Emulation, tom. ii. p. 277.
3. Mémoire sur la Fracture de l'extrémité scapulaire de la Clavicule. Ibid. p. 309.
4. Description d'un procéde nouveau pour la ligature des polypes. Ibid. p. 339.
5. Mémoire sur la membrane synoviale des articulations. Ibid. p. 350.
6. Dissertation sur les Membranes, et sur leurs rapports généraux d'organisation. Ibid. p. 371.
7. Mémoire sur les rapports qui existent entre les organes à forme symétrique et sur ceux à forme irregulière. Ibid. p. 477.
8. Traité des Membranes en général, et de diverses membranes en particulier, Paris, 1800, 8vo.
9. Recherches Physiologiques sur la Vie et la Mort, Paris, 1800, 8vo.
10. Anatomie Générale, appliquée à la Physiologie et à la Medicine, Paris, 1801, 2 tom. 8vo.—1812, 4 tom. 8vo. Beclard published additions to this work in 1821.
11. Traité d'Anatomie Descriptive, Paris, 1801, 2 tom. 8vo. Completed by Buisson and Roux, in 5 vols 8vo.
12. Pathological Anatomy: the last course, from an autograph MS. of P. A. Beclard, 8vo.
13. Œuvres Chirurgicales de P. J. Desault, Paris, 1812, 3 tom. 8vo.

Jo^s Blundell

JAMES BLUNDELL, M.D.

"Animo vidit; ingenio complexus est; eloquentiâ illuminavit."
PATERCULUS.

In the preceding Memoirs, it hath been the writer's aim to dwell upon the qualifications essential to a practitioner of the medical art, and to illustrate the several points by reference to particular individuals. To accomplish this object, a Biographical History of Medicine, embracing a notice of all those who have contributed to the advancement of Medical Science, seems peculiarly fitted. A late venerable prelate,* no less characterized by his great piety and erudition than by the sweetness of his disposition and the entire harmony of his nature, whom to have known is esteemed by the writer of this article a high honour and great gratification, has given it as his opinion, that "Biography is certainly one of the most amusing, and may be made one of the most useful, species of literary composition, when the subject of it is a person very eminent, either in point of talents or of situation, because the sentiments and conduct of such a person cannot but have considerable weight with others." These observations apply with especial force to the physician whose name is affixed to this memoir, for in him are to be found all that is requisite to form the physician, the physiologist, and the man of science. His classical attainments are of a high order, and his professional not less distinguished. The proper education of a physician leads not only to a full acquaintance with the knowledge of his particular science, but to the cultivation and improvement of the highest faculties of his mind, the formation of a perfect taste and a sound judgment. In no science is metaphysics of greater aid than in that of physiology; but few physiologists are metaphysicians, or even logicians. Yet how is it possible, without this knowledge, to distinguish between true and erroneous reasonings, to mark probabilities from facts, or hypothesis from theory?

* Bishop of Norwich.

Dr. Blundell has directed his researches chiefly to physiological science, and applied them to the practice of medicine and surgery in general. He has been no less distinguished by his cultivation of obstetric science, and for many years enjoyed the highest reputation as a lecturer on this branch of medical knowledge. A certain knowledge of the leading principles of midwifery is necessary to the physician in general practice, as he is frequently called upon to treat many disorders incidental to the parturient state, or that are subjected to such a condition of the system. It is no less necessary, indeed it is more essential, to the physician accoucheur, to be intimately acquainted with all the branches of study which ought to be familiar to the general physician. The treatment of diseases must be regulated by a knowledge of the structure of the human frame, and an acquaintance with the laws of the animal economy, and these are of equal importance to both classes of practitioners. Formerly the obstetric practitioner possessed but little knowledge beyond that which he derived from manual practice, or an ordinary routine of similar cases, needing, in the majority of instances, but little erudition, and the exercise of little judgment. The case is now different, and happily so, for the care of the parturient female, and the diseases connected with the gravid state, are placed under the most competent and judicious hands, and receive all the assistance which humanity and science can afford, in the most trying, and often the most perilous, of situations. The importance of this is most strikingly shown in the influence of the moral on the physical faculties of the human species, and the reaction of the physical on the moral in many of the changes and diseases incidental to the female sex, and these are points which have been carefully observed and conspicuously illustrated by the subject of this memoir.

Dr. James Blundell was born in London, on the 27th of December, 1790. He received an excellent classical education, principally under the tuition of the Rev. Thomas Thomason, A.M. Cantab., a man eminent for his benignity, piety, and erudition, and of whose care and attention Dr. B. always speaks with the most grateful remembrance. His professional education was chiefly obtained at the United Southwark Hospitals, where he studied anatomy under Mr. Cline, Sir A. Cooper, and Mr. H. Cline, and attended the demonstrations by Mr. Saunders. He attended the lectures of Dr. Cholmeley on Therapeutics; Dr. Curry and Dr. Babington, on the Practice of Medicine; Dr. Marcet, Dr. Babington, and Mr. Allen, on Chemistry and Experimental Philosophy; Sir A. Cooper, on Surgery; and Dr. Haighton, on Midwifery and on Physiology. To the latter, (his maternal uncle,) Dr. Blundell is anxious to seize every opportunity of

expressing his obligations. In a letter addressed to the writer of this, he most feelingly says, "To Dr. Haighton I owe all a man can owe, both in the way of precept and example. I had the inestimable advantage of residing with him for years. He was a man of the kindest heart, and of a very generous disposition; of *moral* character unspotted; of first-rate physiological attainments in his day; an excellent anatomist; a cautious, safe, and able physician; a man who had that remarkable regard for the sanctity of truth, which made him exact in all his observations; most veracious in his statements, and a guide that may confidently be relied upon wherever he speaks to facts. He was a little irritable, but it was only a 'hasty spark;' and how could a man up at nights, worried with cough, &c., be otherwise? There was this very remarkable in his character, that, of all things, folly used to vex him; he could not laugh at her cap and bells." This is a just and an estimable testimony to the merits and character of a distinguished physiologist and physician, one who was

> "For deep discernment praised,
> And sound integrity, not more than famed
> For sanctity of manners undefiled."
>
> COWPER.

Having received the course of education thus stated, Dr. Blundell went to Edinburgh, and there had the advantage of attending the lectures given by Dr. Monro, Drs. Duncan, sen. and jun., Dr. Home, Dr. Rutherford, Dr. Hamilton, Dr. Hope, Dr. Gregory, and Mr. Fyfe. He acquired information also on botany and medical jurisprudence, subjects of which little notice was taken in London thirty years ago. Thus prepared, Dr. Blundell took his degree. He graduated at Edinburgh in June, 1813, and the subject of his inaugural thesis was "*De sensû quo melos sentitur*," in which he endeavoured to prove that the senses for music and of hearing were distinct, though dependent. He returned to London, and in August, 1814, then only twenty-four years of age, began to lecture, in conjunction with Dr. Haighton, on midwifery, and two or three years afterwards commenced a course on physiology. He was admitted a licentiate of the Royal College of Physicians in 1818. He succeeded Dr. Haighton as Lecturer upon Physiology and Midwifery in the united schools of St. Thomas and Guy's Hospitals. He has regarded the term physiology in its most extensive acceptation, as signifying the science which has for its object natural substances generally; the powers with which these substances are invested; the laws which regulate these powers; and, where they are cognizable by the human intellect, the causes upon which these laws and powers depend.

As applying, however, to living substances, (the ordinary signification of the term,) it naturally falls under the division of human and comparative; the former appertaining to man alone, the latter to the inferior or brute animals and to plants. Dr. Blundell has arranged the animal powers under the heads of assimilation, organization, ventilation, motion, generation, the powers of the mind, and those powers which are operative in the two states of vitality, passive as well as active. He considers all that has hitherto been written on the subject of organization, to be merely superficial and ill-ascertained, and that the knowledge we possess of the sensorial powers, or the powers of the mind, is in a very confused state. He has powerfully delineated the two distinct classes of men, as it relates to their intellectual powers; those who rather receive knowledge and communicate it, and those of more vigorous powers, capable of thinking for themselves, fond of thinking for themselves, men who take more pleasure in the operations of the intellect, than in the Circean styes of sensuality. This class of men are not satisfied with merely acquiring those parts of science which are already known, but they make incursions into unknown regions, and subjugate, as it were, fresh territories of the intellectual world. To the former he recommends assiduity; to the latter, whom he styles the "demigods of the human species, the cementing link between man and superior intelligences," he holds a different language. And, he adds, "I love physiology for the good it has done for the human race, but I am ashamed to confess how full the system is of errors, how full of false opinions, how fettered with prejudices, by which, like Enceladus under Ætna, even the most vigorous minds are oppressed. *Think for yourselves*, is the first lesson which I would inculcate: do not let my opinions, or the opinions of any of my distinguished colleagues, have more weight with you than truth and nature entitle them to. In religion, faith is essential; in physiology, a philosophical scepticism."

In a preceding Memoir, (Baron Haller,) the subject of inflicting pain upon, and occasioning the death of animals for scientific purposes, has been considered. Dr. Blundell has argued this matter in a most able manner, and it cannot be better stated than in his own words:—"They who object to the putting of animals to death for a scientific purpose, do not reflect that the death of an animal is a very different thing from that of man. To an animal, death is an eternal sleep; to man, it is the commencement of a new and untried state of existence. Can no object whatever justify us in putting animals to pain? Are not the very persons who raise these objections, in the habit of torturing animals in hunting? Do they not murder pheasants and massacre partridges? Is not pain daily

and hourly inflicted on the inferior animals, to contribute to the support or pleasure of man; and shall it be fastidiously objected to, when inflicted for the purpose of advancing physiological and medical knowledge? Shall it be said that the objects of physiological science are not worth the sacrifice of a few animals? Men are constantly forming the most erroneous estimates of the comparative importance of objects in this world. What influence, I ask, has the battle of Actium now on the destinies of mankind? what will the battle of Trafalgar have a thousand years hence? Of what importance is it now to mankind, whether Antony or Augustus filled the imperial chair? and what will it matter, a few centuries hence, whether England or France swept the ocean with her fleets? But mankind will always be equally interested in the great truths deducible from science, and in the inferences derived from physiological experiments. The fact that life may be saved by the transfusion of blood into the veins, will be as beneficial a thousand years hence as it is at this day. I will ask, then, whether the infliction of pain on the lower animals, in experiments, is not justified by the object for which those experiments are instituted, namely, the advancement of physiological knowledge? Is not the infliction of pain, or even of death, on man, often justified by the end for which it is inflicted? does not the judge sacrifice the criminal for the good of society? and the general lead his troops to slaughter, to preserve the liberties of his country? It is not the infliction of pain or death for justifiable objects, but it is the taking a savage pleasure in the infliction of pain or death, which is reprehensible. The Iagos and Zelucos of the human race, the man-tigers, who delight in cruelty, are just objects of abhorrence; but when animals are sacrificed on the altar of science, that nature may reveal her secrets, the means are consecrated by the end for which alone experiments are instituted by the votaries of knowledge, and the friends of the human race. Here, then, we take our stand; and we defy the puny drivellers of the press, the declamatory and spurious orators of the day, to drive us from it. We defend the sacrifice of animals, in so far as it is calculated to contribute to the improvement of science; and, in those parts of physiological science immediately applicable to medical practice, we maintain that such a sacrifice is not only justifiable, but a sacred duty."

The argument contained in the foregoing passage is pursued by reference to the importance of transfusion, and other experiments by which human life has been saved, and most completely repels the abuse, and exposes the weakness, of that reasoning by which it has been attempted to check the progress of physiological knowledge, by raising an idle cry

against those who, by experiments upon animals, have contributed so much to the advancement of our knowledge of the manner in which the functions of the animal economy are performed.

In 1825 Dr. Blundell published a volume of "Researches, Physiological and Pathological; instituted principally with a view to the Improvement of Medical and Surgical Practice." These bear reference chiefly to abdominal surgery, to the physiology of generation, and the transfusion of blood. On the former head, the experiments and facts were read before the Medico-Chirurgical Society in 1823, and they were made principally on rabbits, selected because the tenderness of the abdomen in these animals appears to be equally great with that of the human species. Dr. Blundell shews that the great dread of committing injury to the peritoneum, is not well founded, and he infers that a bolder abdominal surgery may fairly be practised, and has submitted a list of various abdominal operations to the consideration of future surgeons. These experiments, and other circumstances connected with various operations that have been since performed, have contributed very much to remove the fears formerly entertained; and it is the opinion of most of our best qualified surgeons, that the injuries anticipated from wounds of the peritoneum, are not of a nature so formidable as generally estimated. In the operations for paracentesis, (tapping,) hernial operations, &c., it is seldom that inflammation of any extent ensues, and more serious lesions of the membrane have in many cases been known to occur, without symptoms of important injury having succeeded them. It is sufficient to state, that the Cæsarean section has been frequently performed with success.

Dr. Blundell has carried the opinions expressed by him, in relation to a bolder system of abdominal surgery, into practice. The extirpation of the uterus has been justly designated as "the most formidable to which the human frame has submitted, or modern surgery dared to relieve;" and this has been successfully performed by Dr. Blundell. The operation was undertaken in the month of February, 1828, in the presence of Dr. Elliotson, Mr. Key, Mr. Morgan, and Mr. B. Cooper. It was a case of malignant bleeding ulceration of the uterus, a disease uniformly fatal in its result. The patient was exceedingly exhausted by the long continuance of the disease; but as no other organ appeared to partake of the malady, Dr. Blundell resolved upon proposing the extirpation of the diseased part; and to this the poor woman readily assented. The record of this extraordinary operation has never yet been given at large: it was performed February the 12th, 1828: the death of the patient occurred February the 7th, 1829; so that she lived twelve months within a few days. During

this period, she became plump and well, and, for a woman about fifty, enjoyed most excellent health. Her death was clearly occasioned by enteritis, following constipation, produced mechanically from constriction and altered position of the bowel. An account of the method of operating is given in the Medical Gazette and the Lancet; and a pretty full account of the autopsia, by Dr. Hodgkin, appeared in the Medical Gazette. (Vol. iii., p. 797.) Dr. Blundell has operated in *three* other cases, but the results have been unfavourable: one dying two or three hours after the operation; another, nine hours; a third, about forty hours. They were all cases without other hope. The successful case came second in order; and without its occurrence, the other two would not have been attempted. Mr. Banner, of Liverpool, has also extirpated the uterus, but the patient died on the fourth day after the operation. Dr. Siebold, of Berlin, extirpated the uterus in 1815, but the patient lived only sixty-five hours. Dr. Holscher performed it in 1824, and the woman died twenty-four hours after the operation. Professor Recamier, of the Hôtel Dieu, performed it in 1829; the account of the case is given up to the 12th day only, at which time the woman was improving. Solitary instances of success are scarcely sufficient to justify the performance of the most dangerous operations. They excite so great a dread, that patients, strong as the desire of life may be, will be deterred from submitting to operations which may safely and necessarily be performed. There are but few cases in which so formidable an operation can be justly proposed or performed. Dr. Blundell's was, however, an instance of this kind, as the issue demonstrates. The chances of recovery are too small to render its performance a matter of frequent occurrence. Few professional men will venture their reputation upon such slight ground for hope of success. And it is the opinion of Dr. B. himself that the case derives its chief value from the proof which it affords of the solidity of the general principle upon which it was grounded—namely, that the power which the abdomen possesses of sustaining the operations of the surgeon, is greater than might have been supposed.

On the subject of GENERATION, the second in the volume of "Researches," Dr. Blundell has shewn that the *corpus luteum* is not necessarily an evidence of female impregnation, as it has been found in cases where complete conception has not and could not have taken place. The importance of this fact, and the statements upon which it is founded in a medico-legal point of view, must forcibly strike every person. The experiments were completed before the year 1819, and published in the tenth volume of the Medico-Chirurgical Transactions. The third part of the work relates to TRANSFUSION. In former times an opinion prevailed that the majority of diseases originated in, or were essentially

connected with, a morbid or peculiar condition of the blood; and Dr. Lower in 1660 proposed to establish a new method of cure by transferring the blood of animals into that of the human species in such a way as to abstract all that was morbid or diseased, and to substitute in its place that which was healthy. This subject excited very great attention, and the happiest results were anticipated from its introduction: but, alas! in the instances in which it was resorted to, it proved fatal; and the practice excited such serious apprehensions for the safety of the individuals on whom it was proposed to be employed, that we find the French legislature absolutely publishing an edict to forbid the having recourse to it. The earliest experiments are said to have been made in France, and the first attempt by Hansheau in 1658. Lower perfected it in 1665. Denis, a physician described as "plus occupé des jeux de hazards, que des jeux de la machine animale," subjected a man to the experiment. The Italians repeated it in 1668, Biva and Manfredi making the experiments. In Flanders, Sinnabaldus did the same. The first four volumes of the Philosophical Transactions relate the cases in which it had been employed, and with such unsuccessful results. It remained for our own day to demonstrate that the practice may be, under some particular circumstances, resorted to with perfect safety and success, and to Dr. Blundell chiefly the merit of this discovery is owing. From his experiments, it appears that blood may be transferred from one animal into another, provided it be of the same species; but if of one animal into another of a different species, then the result is fatal. The experiments of M.M. Prevost and Dumas have confirmed those of Dr. Blundell. The manner in which he arrived at this knowledge deserves to be particularly noticed. The numerous cases of recovery from suspended animation, or rather respiration, in instances of suspension, or of hanging, sufficiently attest that death is at first *apparent*, not *real*; and Dr. Blundell very fairly presumes the same to hold good in cases of asphyxia from the loss of blood; and to these, in particular, he proposes to resort, to the practice of transfusion. This reasoning and the following circumstance, led him to consider of and to institute a series of experiments upon the subject. He was called to a case of uterine hæmorrhagy, which notwithstanding every exertion on the part of the medical attendants, proved fatal. There were circumstances which gave to the case a peculiar interest, and Dr. Blundell, reflecting upon the operations performed by himself upon animals, as well as some interesting experiments made by his pupil Dr. Leacock, and detailed in his thesis, could not forbear considering, that by the ancient process of transfusion the woman might probably have been saved. The apparatus formerly employed was of such an elaborate and complicated character, that sufficient time could not have been obtained for its perform-

ance, that he thought the vessels might be replenished by the syringe with facility and promptitude. It was not, however, yet ascertained how far blood would be fitted for the purposes of the animal economy, after passing through such an instrument, and he therefore resolved to put the matter to the test of experiment. With this view, he instituted a series of experiments upon dogs, and he satisfactorily proved that the transfusion of blood through the syringe does not unfit it for the animal purposes. Blood taken from the femoral artery was directed into the femoral vein, and this was done during the lengthened period of twenty-four minutes, the blood throughout the whole period rushing from the artery, entering the cup, passing the syringe, and returning to the vein, without the animal sustaining any material injury. It was ascertained that from the femoral artery about half a pint of blood would be discharged in the course of two minutes, and as the artery was allowed to give off its blood during the whole time of the experiment, not less than twelve pints of blood must have been received into the cup, and thence transmitted through the syringe to the vein. The whole weight of the animal did not amount to twelve pounds, hence the same blood must have passed through the syringe repeatedly; and the point therefore as to the fitness of the blood for the purposes of life after passing through the instrument must be considered as perfectly established.

Venous blood, Dr. Blundell has shewn, will revive or resuscitate an animal; a point of great importance as it respects the practice of transfusion in the human species. There is reason, however, to suspect that arterial blood would be more beneficial; but the difficulties which present themselves in obtaining a supply, are too great to be readily overcome. Dr. B. has, however, recommended a recourse to the temporal artery. A few months after the publication of the experiments to which allusion has been made (Sept. 26, 1818,) Dr. B. had an opportunity of transfusing blood into — Brazier, a patient in Guy's Hospital, under the care of Dr. Cholmeley for an incurable scirrhous disease of the pyloric orifice of the stomach. Such a case presents a most unfavourable subject for the treatment; yet the man was dying from inanition, and, to prolong life, he was himself anxious that it should be tried. The transfusion of between twelve and fourteen ounces of blood into the cephalic vein of his arm, in the course of 30 or 40 minutes appears to have produced temporary benefit; his strength was somewhat recruited by it, and his pulse became larger, and the temperature of his body higher. The man stated himself to be revived by it, and to be "better, much better." Yet the operation not being repeated, he again sunk into a state of great exhaustion, and died fifty-six hours after the blood had been supplied. This case served to establish the safety of the operation, and to shew that under other circumstances it might be attended with more

favourable results; and, in Aug, 1825, Dr. Blundell had the great satisfaction of operating on a woman who was sinking from after-flooding, and on which occasion the operation was crowned with signal success.

The example of Dr. B. has had its influence upon the profession, though not to the extent that might reasonably have been expected. Emboldened by the preceding case, however, Mr. Doubleday operated a short time afterwards, and he has the merit, and the inexpressible gratification, of having been the means of saving by the transfusion of blood the life of a female, who but for its use must have been numbered with the dead, from the consequences of an uterine hæmorrhage. Brandy, laudanum, ammonia, and other stimuli usually employed in such cases, were found to be of no avail. Fourteen ounces of blood were injected from the arm of her husband, and she recovered. The case is circumstantially detailed by Mr. Doubleday, in the London Medical and Physical Journal for Nov. 1825. It appears that the pulse, some time previous to the operation, when it could be numbered, was 140, but was now reduced to 104. A quarter of an hour after the operation it was 98, in half an hour 90. The pulse, for the most part, was strong, soft, and full, but somewhat irregular, and continued so for upwards of two hours. At about the expiration of an hour after the blood was injected, she sat up, and assisted the nurse in undressing, and in making herself more comfortable, as if nothing had occurred beyond what is to be observed in ordinary cases!

Acting upon the two successful cases referred to above, Dr. Blundell succeeded in restoring Mrs. B. of Fleet-street, Nov. 10, 1825, from asphyxia, the consequence of uterine hæmorrhage. Twelve ounces of blood taken from the arms of Dr. Uwins and Mr. Wright, her medical attendants, were injected into the venous system. It is now thirteen years since the operation, and the lady is still living.

In 1827, Mr. Brown, a practitioner in Southwark, had a case similar to the preceding. Transfusion was resorted to, and from a state of apparent dissolution she completely recovered. Dr. Blundell does not consider it necessary to inject any large quantity of blood in these cases. The average has not been ascertained; but a small quantity is sufficient to turn the balance in favour of life. He thinks from half a pint to a pint an ample supply in all cases of asphyxia from uterine hæmorrhage. He candidly states, that in nineteen out of twenty cases of this description, transfusion will not be needed; but he boldly maintains that, "under the best and most judicious treatment, and certainly under treatment of average excellence, dissolution may occur, sometimes so suddenly that you have not time to act; more frequently in a gradual manner, so that you see the patient sinking slowly, little by little, into the grave."

In some of these cases, life may be restored by transfusion. It never can be necessary to throw in a quantity of blood equal to that which has been lost; a sufficiency to enable the heart and arteries to control and to support the patient long enough to allow the vessels to accommodate themselves to the quantity in circulation, is all that will be requisite.

Dr. Blundell states, that although the blood of the mammalia may be essentially the same in all the genera, the different kinds of blood differ very importantly from each other. He suggests an inquiry, whether any genus of animals be furnished with a kind of blood congenial to the human veins? From recent experiments made in France, this can hardly be expected to be resolved in the affirmative. The odour of blood is very remarkable, and M. Barruel (Journal de Science N.S. vi. 187.) has declared this fluid to contain a volatile principle peculiar to each species of animal. He states this principle to have an odour resembling that of the cutaneous or pulmonary exhalation of the animal, and to serve as a distinctive character by which the blood of different animals may be recognized. This principle is dissolved in the blood, and the odour may be perceived when the blood or its serum is mixed with strong sulphuric acid. The odour is said to be stronger in the male than in the female—in man, to resemble the human perspiration—in the ox, to smell like a cow-house—and in horses, to be similar to their perspiration. This is a subject of curious inquiry, and highly deserving of attention, as it may become an aid in some cases of medical jurisprudence.

A summary of Dr. Blundell's personal experience in transfusion may thus be stated: the operation has been performed *eleven* times by his own hand, ten times in cases of most pressing danger from loss of blood, and once in a case of inanition from scirrhosity of the pylorus, and consequent starvation. Of these ten cases, in nine only was there any reasonable prospect of success, one of them being a case in which the patient had ceased to respire five minutes before the first supply of blood was thrown in. Of the nine operations, five failed, and four succeeded. Of the five failures, one might be reasonably imputed to an insufficient supply of blood, six ounces only having been injected; but the other four failures most clearly arose from the insufficiency of the remedy, the patients sinking within half an hour or an hour from the performance of the operation. In all the ten cases, venous blood was employed. In four of the cases of failure Dr. Blundell thinks it highly probable that arterial blood would have been more successful. Of the four cases which succeeded, in three the success was complete, one of the patients being still living, thirteen years after the operation, and the other two he presumes to be living still. The fourth

case was successful in part only; the patient was completely resuscitated, lived for two or three days, and seemed to be doing well, but sank from effusion into the thorax, where extensive old thoracic adhesions were found. In all these four cases the operation was not performed till, with large experience in these matters, he felt that there was no other hope for the patient. Of all the ten cases, in two only did the operation seem to distress; its general effect was cordial; and of these two cases, in one only, where, in his zeal to save the patient, a more than ordinary quantity of blood was injected, was the distress considerable. In the second case, however, the distress was painful to witness. After all his experience, he has assured the writer of this, that, were a friend of his own sinking from the effects of flooding, he would strongly recommend the remedy, and, if to be had, arterial blood.

At the close of each physiological course, Dr. Blundell was in the habit of publishing in the class-room a list of the more interesting problems relative to the animal economy, which had furnished subjects for investigation. Very few of these have been printed, and the notice of some of them cannot but be highly interesting to the physiologist.

1. *On Chylification.*—A set of experiments designed to ascertain whether the bile must mix with the chyme in order that the white chyle may appear. From these experiments it was found,—1. That white chyle does *not* make its appearance when the bile is excluded from the chyme, as, for example, by tying the ductus communis choledochus. 2. That the white chyle *does* make its appearance when the bile mixes with the chyme. These experiments were completed before the commencement of the year 1817, were first published in the class-room a year or two afterwards, and were annually brought forward in the lectures till the course ceased abruptly in 1834, when Dr. Blundell quitted the school. One of the most striking experiments was repeated before his physiological class year after year. Chyme was enclosed in a bag of black silk: fluid from the chyme was then expressed through the pores, and was found not to become white: the bag was then dabbed upon a plate moistened with cystic bile, which it immediately absorbed; the fluid of the chyme was then again pressed through the silk, when it immediately became white: where the bile was, a fixed white stain remained.

2. *On Coagulation of the Blood.*—A set of experiments designed to ascertain the nature of that vascular power which resists the coagulation of the blood. From these experiments it was found, so far as experiments were made,—1st. That whatever destroys the vitality of the vessel destroys also equally the power of resisting coagulation; and, 2d, That whatever does *not* destroy the vitality of the vessel, does not destroy the power of resisting coagulation; whence it was inferred to be *probable* that the power of resisting coagulation is the life in the coats of the vessel, and that this power is exerted by the communication of the vitality to the blood; the latter clause of the conclusion especially being advanced as a probability only. These experiments were brought to a close before the commencement of the year 1818, and, like the former, were published in the class-room annually, in the physiological lectures.

3. *On the Blood as Aliment.*—An experiment designed to shew that the necessity of food may be superseded by supplying blood to the vessels of an animal in a direct manner. In this experiment a dog was sustained for three whole weeks without the help of any food whatever; its drink was water, and its nourishment a few ounces of blood from another dog every day, or every other day, injected into the external jugular vein. The dog never appeared hungry; at the end of the three weeks, though

unwell, it seemed still in no danger of sinking. And, on the whole, the great point of investigation appeared to be in good measure ascertained, namely, that the necessity for eating may be superseded by regular injections of blood into the veins; in other words, that it is possible to live for a length of time without food. This experiment was made in the spring of 1819, in the hope that it might be of use in saving life in cases similar to that of Brazier, the patient who died in Guy's Hospital from the impossibility of retaining and digesting supplies of aliment. The purpose of the experiment is mentioned, to shew that it was not wantonly made. The particulars are to be found in Dr. Blundell's "Researches."

4. *On the Life of the Fœtus.*—Certain observations made to prove that the fœtus *in utero* feels, that it has apparently sensibility, some desire of nourishment, volition, perhaps instinct, and, in a word, that it possesses *in utero* most, if not all, the powers of active life which it enjoys immediately after birth. These observations were made before the year 1820, and were published in the class-room soon after.

5. *On the Coagulability of the Fœtal Blood.*—The blood obtained for the purpose was generally taken from the umbilical vein of the funis of the human subject. From these experiments it was found,—1st. That this blood generally coagulates; 2d. That in the main it separates in the ordinary manner into serum and crassamentum; and, 3. That the upper part of the clots exposed to the air brightens, and becomes of a more scarlet arterial colour than the lower; in a word, that in all that is essential, the blood of the human fœtus coagulates like the blood of the human adult. Two curious observations were made in the course of these experiments,—1. That the blood of the fœtus of only seven months obeys the general law, that it coagulates, that it separates the serum, though in sparing quantity, and that the upper surface of the crassamentum brightens on exposure to air; and, 2. That the blood of the nine-months' fœtus sometimes, though rarely, coagulates in appearance only; the serum separating fully, the crassamentum, to the eye at least, forming distinctly in the usual manner, but this apparent crassamentum being destitute of solidity, and falling to pieces immediately under the touch. The last of the experiments was made before the year 1823.

6. *A set of experiments to prove that large raptures in the body of the bladder may occasionally be cured by laying open the peritoneal cavity, closing the aperture in the bladder by means of a ligature, withdrawing the urine from the cavity of the peritoneum into which the rupture discharges it, and washing out the peritoneum with tepid distilled water.*—In some of these experiments, it was found, that in rabbits one-third of the bladder might be cut away, and that the large aperture remaining might be closed up by ligature; that several of the animals recovered afterwards, and that the bladder of reduced size continued to perform its functions. An eminent surgeon, acting (as he himself told Dr. Blundell) on the principle of these experiments, once tied up an aperture in the stomach, and thereby saved the life of a patient. This fact should be recorded, and the particulars of the case published, as it deserves the candid consideration of those who object altogether to experiments upon animals. The life of the man was here probably saved by the sacrifice of rabbits, which would have been killed to supply his physical wants, had they not thus been rendered subsidiary to the higher office of contributing to his intellectual improvement. The experiments were completed before the year 1823.

7. *On the Power whereby the Muscular Structure of the Heart contracts.*—The experiments were six or seven in number, and in them the heart taken from a dog newly drowned, was laid upon a plate, and a pipe was introduced into the *coronary vein*, preferred to the arteries on account of its larger capacity, its single trunk, and the opportunity of ascertaining the effect of a reversed circulation. The arterial blood of another dog was then made to circulate through the coronary system of vessels, the blood entering by the vein, which performed the office of an artery, and escaping by the two arteries which performed the office of the vein; the circulation becoming reversed. In one of the experiments only was the circulation fully established, when it continued for more than ten minutes, and the heart, before pale, flaccid, lifeless, and without any visible contraction, became of a full red, firm and active; all the fibres were in a quiver, and, when grasped by the hand, a strong throbbing action of the ventricles, the left especially, might be felt, though the cavities were empty, and the heart was hanging from the tube which supplied it, like an apple from the sprig: the labouring of the ventricles was obvious, but not attended with the full systole and

diastole which accompany the true circulation of blood. These experiments were completed before the year 1825, (the last was made in October, 1824,) and were published annually in the class-room afterwards. Besides throwing light on various other points of physiology, they go far to prove the superiority of arterial blood for the purposes of restoring the powers of the heart, when failing from flooding, &c.; in other words, the superiority of this blood for the purposes of transfusion.

8. *A set of Experiments designed to refute the erroneous opinion of Barry and others, that the Blood enters the Heart through the great veins during inspiration only.*—One of the most striking of these experiments was made in a diving-bell, at the bottom of the Thames; the atmosphere of the bell being, at the time, nearly of double density. "With a minute watch in my hand, I found that for nearly two minutes together, I could suspend respiration without material distress or disorder of body or mind, the pulse beating all the time in the radial artery with the utmost regularity. Now, as several pints of blood must have passed the heart in the course of the two minutes, allowing only three half ounces for each stroke of the left ventricle, it was clear that several pints must have entered from the veins; and as neither the circulation nor other functions were disturbed during the experiment, it was evident that the blood must have been flowing from the veins into the heart in the usual manner during the whole period, and yet throughout this whole period, the inspiration was completely suspended, whence it follows that the blood flows from the great veins into the heart in the usual manner, without the aid of inspiration." This experiment was made at the time of the irruption of water into the tunnel, when the first catastrophe occurred, in the year 1827.

9. *Experiments to prove that in Poisoning by nux vomica, and probably other poisons of similar operation, the poisonous dose which destroys life, is not contained in the circulating blood of the animal.*—In three experiments it was found, 1. That if a dog be poisoned with the minimum dose of strychnine sufficient for the purpose, its life cannot be saved by drawing off its blood when the poison is getting into full action, and replenishing it with blood from another and healthy dog. The vessels in some experiments were three times washed out, as it were, by drawing away the poisoned blood from the same animal when under the influence of the poison, and as frequently replenishing it, yet without preserving life. 2. That if a dog be drained of its blood, and replenished from another dog under the influence of the poison, the dog which receives is not poisoned by the blood thrown in, nor does it in *general* manifest any obvious signs of the presence of the poison: in one experiment, however, characteristic spasms were observed in the dog receiving blood from another dog under the full influence of the strychnine, though even in this case the animal speedily recovered. An interesting observation was made in conducting these experiments, namely, that a dog cannot be poisoned by very large doses of *opium* in its different forms.

From the whole of these experiments it was found, that when an animal is poisoned by strychnine, some of the poison is contained in the circulating blood, but the quantity there contained is not sufficient to destroy life. The poison was inserted by an arrow passed into the muscles of the neck. These experiments were completed before the year 1828.

In the Lancet for 1827-8, reports of Dr. Blundell's lectures on Midwifery made their appearance. These were afterwards collected together, arranged, subdivided, and commented upon by Dr. Castle, and in 1834 published under the title of "The Principles and Practice of Obstetricy." This work has acquired a very just celebrity. Dr. B. lectured on Midwifery in the neighbourhood, and afterwards in connexion with, the Medical School of Guy's Hospital, from the year 1816 to 1834; and his withdrawal at this period was a matter of very deep regret to a large body of medical students. The circumstances which induced him to retire from the chair of Midwifery, gave rise to the publication of some pamphlets which reflect no credit on

those who acted in opposition to Dr. Blundell upon this occasion. Dr. B.'s conduct in this affair has been marked by that high sense of honour and independence which should characterize a professional man in such matters. "*Transeat in exemplum.*"

It appears that an attempt was made on the part of the Treasurer or Director of Guy's Hospital, to associate a gentleman with Dr. Blundell in the performance of his duties as a teacher, and that advantage was taken of his absence from England, to advertise this person as a colleague, without the sanction of Dr. B. The Doctor has publicly charged the Treasurer with being "a party to an unwarranted use of his name, under circumstances of deliberate assumption and broken engagement." This conduct will be seen to be most extraordinary when it is made known that the course of Lectures was in its origin private, and established long before the Medical School of Guy's Hospital had an existence. It was purchased by Dr. B.'s labour; illustrated by his private museum; supplied with practice from his private institution, (till the last year or two wholly;) and though annually advertised with the other Hospital lectures, yet, as far as right was concerned, it was advertisable when and where he thought fit. The conduct on the part of the Treasurer induced Dr. Blundell to withdraw his museum from the Hospital, and to conclude his labours as a teacher; a resolution much to be regretted, on account of his great abilities to instruct, and the vast professional acquirements he possesses; but it was a step for which no one can censure, but, on the contrary, must applaud him, for it shews a proper sense of what is due to himself and the honour of the profession.

The Lectures of Dr Blundell display considerable sagacity, and acquaintance with his profession. They shew him to be an intelligent and keen observer; and to be a most faithful reporter, devoid of all prejudices, and anxious to give to every one the merit that is due to them, by the most honest and liberal conduct. The work is divided into five parts: the first two of which relate to the anatomy and physiology of the Female System; the third, to the signs and diseases of Pregnancy; the fourth, to the art of Delivery; and the fifth, to the after-management of the Puerperal State. Upon all these subjects Dr. Blundell communicates the extent of knowledge already acquired, and illustrates it by his own researches and experience. He takes every opportunity of doing justice to the physiological inquiries of his predecessor and relation, Dr. Haighton, one of the best experimenters of his day. Any analysis of the work must be entirely out of the question; it must be referred to, and read, with the greatest care. Of its merits, it is sufficient to observe, that a very competent authority has spoken of it as "a mine of gold—a treasure of literature, science, and practical know-

ledge for the student, which it would be suicidal madness in him to neglect, or fail to have constantly in his possession for reference." (Johnson's Med. Chir. Rev. No. 43.) In the last division of the work, a disease is noticed, of very considerable importance. Dr. Blundell has named it Hidrosis or Hidrotic Fever. There are various types of this disease; the severe ones are dangerous, and the malignant almost uniformly fatal. In its commencement it resembles the puerperal fever, and is ushered in by a shivering or shuddering with a sense of cold more or less severe; the pulse changes in its frequency in a most remarkable manner, rising up from 90 to 140 or 150 suddenly, without any evident cause. Dr. B. observes, that there is not unfrequently a morbid state of the nervous system, which shews itself in a certain quickness of manner, a rapidity of utterance, or a disposition wayward, pettish, or passionate; sometimes, also, the patient becomes the subject of whimsical impulses, either of a comic or tragic character, so that there is an evident tendency to puerperal mania, which may ultimately, though not generally, occur. On the other hand, the patient's manner is now and then marked with a sort of forced coolness, and in some cases there is no very obvious disorder of the nervous system, for these symptoms are not constant."

From the preceding sketch, it will be evident that the career of Dr. Blundell has been one of great assiduity and usefulness, and it is gratifying to add, that his talents and zeal are no less appreciated by the public, than his abilities and integrity are admired by the profession. He has faithfully noted in his "Adversaria" the various physiological experiments he has made, and has accurately minuted the particulars of cases which have been entrusted to his care. It is ardently to be hoped that he will be able to find leisure to arrange these, and submit them to the notice of his profession, and thus confer additional obligations on its members, and contribute to the further advancement of medical knowledge. "Non enim vox illa præceptoris, ut cœna, minus pluribus sufficit; sed ut sol, universis idem lucis calorisque largitur."—*Quintilian.*

Joannes Cairns

JOHN CAIUS, M.D.

"Unde Doctoris titulo gloriantur, nisi ut doceant?"—Erasmi Epist.

John Caius, or, in English, Kaye or Key, may justly be regarded as the successor of Linacre, having been appointed to the presidency of the Royal College of Physicians, and also physician to the court during the reigns of Edward VI., Queen Mary, and Queen Elizabeth. He was no less his successor in his tastes and pursuits, for they alike cultivated letters, medicine, and natural history. He was the son of Robert Kaye, of a Norfolk family, and born on October 6, 1510, in the city of Norwich; where he received his earliest education, and was thence sent to Gonvil Hall, Cambridge in 1529. At this college he took the degrees of Bachelor and Master of Arts, and in 1533 was elected one of the Fellows. At the early age of twenty-one he is said to have translated out of Greek into Latin, Nicephorus Callistus's treatise of "Confession in Prayer;" also Chrysostom on the "Manner of Prayer," and Erasmus's Paraphrase on Jude, from the Latin into English. He also made an Epitome of Erasmus's "De Vera Theologia." From these exercises, it might have been expected that he had selected divinity for his profession; but, like to his predecessor Linacre, he travelled for improvement, and visited Italy, France, Flanders, and Germany. At the university of Padua he studied under John Baptist Montanus, a most eminent scholar; and in 1541 he took a Doctor's degree in physic. When at Padua, Caius lived during eight months in the same house with Vesalius, together studying anatomy. Upon his return to England, he taught this science to the surgeons, soon after their incorporation in 1540, and he continued to do so for twenty years, even after his election to the chair of the College of Physicians, and appointment of physician to the court. He read lectures on physic at the university of Padua for some years, and also lectures on Aristotle, (about the year 1542,) but it is said he took his degree at Bologna.

He returned to England in 1544, and commenced practice at Cambridge, then at Shrewsbury, and afterwards at Norwich. He was admitted a Fellow of the London College of Physicians, and, from the records of the college, it appears that he passed through all the offices, for he was

appointed censor, registrar, treasurer, and, for seven years and upwards, president of the college. He kept a record of the proceedings forming the annals of the college from the year 1555 to 1572. This is written in Latin, in his own hand, very clear and precise in its style, and forms the earliest account of the transactions of that body. He is said to have been so precise in his attendance at the college, as never to have been absent from the committee or meetings without a dispensation.

His skill in practice acquired for him great reputation, and his celebrity reaching the knowledge of the court, he was summoned thither, and made physician to Edward VI., and, after that king's death, he was appointed to the Queens Mary and Elizabeth, and remained in this elevation until the year 1568, when, it is said, he was dismissed, under a suspicion of being too much attached to the Popish religion. His religious principles have been questioned. He is supposed to have conformed in his latter years, at least in outward observances, to the Reformation, but that his inclination was to the principles of his early days.

Upon his retirement, he fixed himself at Cambridge, where he died, July 29, 1573; and having by his practice amassed a considerable estate, he left the same at his decease to build a new college to Gonvil Hall, and thus became the co-founder of Gonvil and Caius College, in the chapel of which he was buried; and a monument is there erected to his memory, with the laconic inscription, as directed by himself, of

"Fui Caius—Vivit post funera virtus.
Obiit 1573, Æt. 63."

His intentions towards his college did not spring up after his withdrawal from the court, for it appears that, having considerable influence with the Queen Mary, he obtained from her majesty a license to advance Gonvil Hall into a college, and that he then made arrangements for suitably endowing it, providing adequately for the maintenance of three fellows and twenty scholars. This was accomplished in the years 1557 and 1558. He framed a new body of laws for the government of the college, and was himself the master of it in 1559, and remained in that office until a short time previous to his decease. The erection of the new square of the college was called Caius Court in 1565, and finished in 1570, having cost in its completion the sum of £1834, a very considerable amount at that period, nearly the whole of which was defrayed by Caius. The character of Caius is somewhat developed by the arrangements made in this new building; they exhibit a quaintness in accordance with that shewn in his monumental inscription, and they also serve to depict the general feeling and taste of the

age in which he lived. Thus, over one of the gates, which was small and low, is inscribed, "Humilitatis;" another, of finer and more noble structure, is called, "Virtutis;" and on the opposite side is written, "Jo. Caius posuit sapientiæ." The gate which leads to the public schools, through which all must pass to obtain their degrees, is styled, "Honoris." Thus did Caius found the most celebrated of the colleges of Cambridge for medical learning of the present day; and in this academic retreat did he spend the latter days of his life, far removed from the noise and intrigues of the court. A short time before his decease, he caused a new master to be appointed, but continued as a fellow-commoner, assisting daily at divine service in a private seat in the chapel built for himself.

The simplicity of the tastes and pursuits of Caius and Linacre have been already adverted to. They were both masters of the Greek language, with which there were but few at that time conversant, and they both translated from the works of that master of physic, Galen. The writings of this author translated by Caius will be seen at the close of this memoir. But Caius was also an original writer, and he always composed in the Latin language, with the exception of one early tract which he wrote in the English tongue, and the subject of which is of considerable interest and curiosity. It relates to the "Sweating Sickness," of which a few particulars may not be unacceptable to the reader.

The title of the tract to which allusion has been made is, "A Boke or Counseill against the Disease commonly called the Sweate or Sweatynge Sickness." It was printed by R. Grafton, at London, in 1552, in 8vo. The sweating sickness, Dr. Freind informs us, was originally a native of our own island. Dr. Mead did not admit its indigenous origin; but there are other authorities in its favour. Lord Bacon was of this opinion, and so also was Caius, who has given to us the best account of this singular malady. Its importance to Englishmen occasioned Caius to write upon it in the English language, which we may presume was considered *infra dignitate*, from an apology he thought it necessary to make in his tract upon the subject.

The disease began in 1483, in the army of Henry VII., upon his landing at Milford Haven, whence it spread to London, and there continued from September 21st to the end of October. It singularly returned in this country *five* times, and this always in the summer months, and in the years 1485, 1506, 1517, 1528, and 1551. In 1529 it was confined to the Netherlands and Germany, where its prevalence was so great and so fatal, as to occasion the breaking up of the conference at Marpurgh, between the celebrated reformers Luther and Zwingle, on the subject of the Eucharist.

In 1507, it was so severe, as to kill many in the space of three hours from the commencement of the attack. In 1528, it proved fatal to many in the course of six hours. Several of the English nobility became its victims, and Henry VIII. had well nigh succumbed to the pestilence. The last visitation of this disease carried off in Westminster alone one hundred and twenty in one day, and the two sons of Charles Brandon, both Dukes of Suffolk, died of it.

Caius was in practice at Shrewsbury at this time, when the disease was raging with great violence, and he has given the best description we possess of this epidemic. He compares it to the plague of Athens. He calls it a pestilent contagious fever of one natural day (ephemera); the sweat itself he reckons only as a symptom or crisis of this fever. The manner of its seizure was thus: first it affected some particular part, attended with inward heat and burning, unquenchable thirst, restlessnees, sickness at stomach and heat, (though seldom vomiting,) head-ache, delirium, then faintness, and excessive drowsiness, the pulse quick and vehement, and the breath short and labouring. Children, poor and old people, less subject to it. Of others, scarce any escaped the attack, and most died; in that town, where it lasted *seven* months, perished near a thousand. Even by travelling into France, or Flanders, they did not escape: and what is stranger, even the *Scotch* were free, and abroad the *English* only affected, and foreigners not affected in *England*. None recovered under twenty-four hours: at first the physicians were much puzzled how to treat it; the only cure was to carry on the sweat, which was necessary for a long time, for if stopped, it was dangerous or fatal. The way, therefore, was to be patient, and lie still, and not to take cold. If nature was not strong enough to do it, art should assist her in promoting the sweat by clothes, medicines, wines, &c. The violence of it was over in fifteen hours; but no security till twenty-four were passed. In some there was a necessity to repeat the sweating; in strong constitutions, *twelve* times. Great danger to remove out of bed: some who had not sweated enough, fell into very ill fevers. No flesh in all the time, nor drink for the *first five* hours, for in the *seventh*, the distemper increases; about the *ninth*, delirium: sleep to be avoided by all means. Caius is particular in the remedial part, to insist upon the *maintenance* of the perspiration and the *absence* of sleep. For the former he recommends a variety of means; as to the latter, he says, "do not let them on any account sleep, but pull them by the ears, nose, or hair, suffering them in no wise to sleep, until such time as they have no taste to sleep; except to a learned man in physic, the case appears to bear the contrary. If under this discipline they happily recover, and find their strength be

sore wasted, let them smell to an old sweet apple, and use other restoratives of similar efficacy; for there is nothing more comfortable to the spirits, than good and sweet odours."

The malignancy and fatal character of the disease, were of the severest description, and it is said to have immediately killed some "upon opening their windows; some in one hour, many in two, and at the longest to them that merrily dined, it gave a sorrowful supper." Armstrong's description of this disease, the combined effort of the physician and the poet, is most powerful and interesting.* It is of too great length for entire insertion here, but the following passages may not be considered obtrusive.

"First through the shoulders, or whatever part
Was seiz'd the first, a fervid vapour sprung.
With rash combustion thence, the quivering spark
Shot to the heart, and kindled all within;
And soon the surface caught the spreading fires.
Through all the yielding pores, the melted blood
Gush'd out in smoky sweats; but nought assuag'd
The torrid heat within, nor aught reliev'd
The stomach's anguish. With incessant toil,
Desperate of ease, inpatient of their pain,
They toss'd from side to side. In vain the stream
Ran full and clear, they burnt and thirsted still.
The restless arteries with rapid blood
Beat strong and frequent. Thick and pantingly
The breath was fetch'd, and with huge lab'rings heav'd.
At last a heavy pain oppress'd the head,
A wild delirium came; their weeping friends
Were strangers now, and this no home of theirs.
Harass'd with toil on toil, the sinking powers
Lay prostrate and o'erthrown; a ponderous sleep
Wrapt all the senses up: they slept, and died.

"In some a gentle horror crept at first
O'er all the limbs; the sluices of the skin
Withheld their moisture, till by art provok'd
The sweats o'erflow'd; but in a clammy tide:
Now free and copious, now restrain'd and slow;
Of tinctures various, as the temperature
Had mix'd the blood; and rank with fetid steams:
As if the pent-up humours by delay
Were grown more fell, more putrid, and malign.
Here lay their hopes, (though little hope remain'd,)

* Art of Preserving Health, book iii.

With full effusion of perpetual sweats
To drive the venom out. And here the fates
Were kind, that long they linger'd not in pain.
For who surviv'd the sun's diurnal race,
Rose from the dreary gates of hell redeem'd:
Some the sixth hour oppress'd, and some the third.

"Of many thousands, few untainted 'scap'd;
Of those infected, fewer 'scap'd alive;
Of those who liv'd, some felt a second blow;
And whom the second spar'd, a third destroy'd.
Frantic with fear, they sought by flight to shun
The fierce contagion."

The causes of this disease, like to most epidemics, are involved in obscurity. That it was nourished by the uncleanly habits and filthy abodes of the English in the sixteenth century, is certain. Caius attributes it to the "evil diet of the country, which destroyeth more meats and drinks, without all order, convenient time, reason, or necessity, than either Scotland, or all other countries under the sun, to the great annoyance of their own bodies and wits, hinderance of those which have need, and great dearth and scarcity in the commonwealth. Wherefore, if Æsculapius, the inventor of physic, the saver of man from death, and restorer to life, should return again to this world, he could not save those sorts of men;" and, he adds, "that those who had the disease, sore with peril or death, were either men of wealth, ease, and welfare, or of the poorer sort, such as were idle persons, good ale drinkers, and tavern haunters—the laborious and thin dieted escaped."

The year following the publication of this tract, Caius put it into a Latin dress, and revised the whole, publishing it under the title of "De Ephemera Britannicâ." In this edition he enters upon the consideration of many points not noticed in the original tract, and digresses largely upon the article of diet, giving directions for the making of different kinds of malt liquor.

The arbitrary distinction attempted to be made between medicine and surgery, prevailed at an early period, and the jealousy of the practitioners in each department has been often evinced. Caius was a zealous defender of what he considered the rights and privileges of the physicians; and in a difference arising between these and the surgeons, in the time of Elizabeth, as to the propriety or lawfulness of the latter to administer internal remedies for the sciatica, Caius appeared before the Lord Mayor and other Queen's delegates, in his character of President of the College of Physicians, where he contended so stoutly and so learnedly in favour of the members of his

own body, that it was determined by the Queen's commissioners, to be unlawful for the surgeons to practise in such cases. The Bishop of London, the Master of the Rolls, and others, unsuccessfully advocated the cause of the surgeons on this occasion.

This conduct on the part of Caius, it is natural to suppose, created for him many enemies, and it has been suggested as likely to have been the cause of the selection by Shakspeare, of his Dr. Caius in "The Merry Wives of Windsor." But, our great bard most probably intended, by his character of the French doctor, to typify a class of pretenders too common in his and other days, rather than to throw ridicule upon the manners of a really learned and scientific physician.

His knowledge of Greek has been alluded to. His Latin has always been admired, and he wrote a treatise on the pronunciation of the Greek and Latin languages. Having travelled and studied abroad, Caius was in favour of the foreign mode of pronunciation of the Latin vowels, and of the manner of the modern Greeks as it respected their language.

His attachment to his Alma Mater led him into a silly controversy with one Thomas Key, a Fellow of All Souls College, Oxford, who, incited by a speech delivered by the public orator, and addressed to Queen Elizabeth upon her visit to Cambridge in 1564—in which the antiquity of Cambridge was particularly extolled—undertook to vindicate the priority of Oxford, which he asserted had been founded by some Greek philosophers, the companions of Brutus, and restored by Alfred about the year 870. Caius, at the instigation, it is said, of Archbishop Parker, entered the lists against the Oxonian, and contended for the foundation of Cambridge by one Cantaber, 394 years before Christ. But to turn from these antiquarian speculations, let us view him as a naturalist. That his researches should at the present day be entitled to translation and insertion, at their entire length, in the Zoology of Pennant, is sufficient evidence of their value. He enjoyed great intimacy with the celebrated Gesner, with whom he maintained a correspondence. Gesner speaks of him in his "Icones Animalium," as a man of consummate erudition, judgment, fidelity, and diligence, and in an epistle to Queen Elizabeth, he calls him the most learned man of his age. It is said, that, at the request of Gesner, Caius wrote his treatise on British dogs, (De Canibus Britannicis,) of which several editions have appeared. As the descriptions are to be found in Pennant, it is unnecessary here to enter upon them; they will amply repay the reader the trouble of their perusal.

Caius also published some other works on natural history, on some rare plants and animals, and on the hot-springs of England. From the

particulars thus noticed, it will be seen that Caius's love of learning distinguished him throughout life. He erected a monument to the memory of Linacre in St. Paul's cathedral; thus marking his zeal and devotion to learning and science. It would seem, that prior to his death, he must have been in a state of extreme weakness, for under the article "Milk," in Dr. Moffet's curious book, entitled, "Health's Improvement, or Rules comprising the Nature, Method, and Manner of Preparing all sorts of Foods," &c., we find the following curious notice:* "What made Dr. Caius in his last sickness so peevish and so full of frets at Cambridge, when he suck'd one woman, whom I spare to name, froward of conditions and of bad diet; and contrariwise so quiet and well, when he suck'd another of contrary disposition? Verily the diversity of their milks and conditions, which being contrary one to the other, wrought also in him that sucked them contrary effects."

The following list comprises the works of this distinguished physician:

1. Hippocrates de Medicamentis—De Virtus Ratione. Caius was the first who found in MS. the Dissertation of Hippocrates De Medicamentis.

2. De Medendi Methodo, lib. ii. ex Cl. Galeni, Pergam. et J. B. Montani Sententia. Basil, 1544, 8vo.

3. Cl. Galeni Perg. Libri aliquot Græci, partim hactenus non visi, partim à mendis repurg. Annot. illustr. Basil, 1544, 8vo.; 1574, 4to.

4. A Boke, or Counseill against the Sweat, or Sweatynge Sickness. Lond. R. Grafton, 1552, 12mo.

5. De Ephemera Britannica, lib. i. Lovan. 1556. Et. summâ curâ recog. Lond. 1721, 8vo. This is the best edition.

6. Opera aliquot et versiones, partim jam nata, partim recognita atque aucta. Lovan. 1556, 12mo. A wood-cut of Caius with a large beard is affixed to this work.

7. De Antiquitate Cantabrigiensis Academiæ, lib. ii. Adjunximus Aportionem Antiquitatis Oxoniensis Academiæ: ab Oxon. quodam. Lond. 1568, 12mo. 1574, 4to.

8. De Rariorum Animalium et Stirpium historia. Lond. 1570, 4to.

9. Institutionum Liber Posterior de Rebus. Lovan. 1570, 16mo.

10. De Canibus Britannicis, lib. i. De Rarior. Animal. &c. lib. i. De Libris Propriis, lib. i. Lond. 1570, 1574, 1576, 1699, 1721, 8vo. Lugd. 1728, 4to.

11. Of Englishe Dogges, the diversities, the names, the natures, and the properties. Translated by Abraham Fleming. Lond. 1576, 4to.

12. Commentarii in Cl. Galeni de Administrationibus Anatomicis: in C. de Motu Musculorum: in L. de Ossibus. Basil, 1574, 4to.

13. De Pronunciatione Græcæ et Latinæ Linguæ. Lond. 1574, 4to

14. Opuscula, a S. Jebb. Lond. 1729, 8vo.

15. De Thermis Britannicis

* P. 210.

Anthony Carlisle

SIR ANTHONY CARLISLE, F.R.S.

ETC., ETC., ETC.

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS.

Sir Anthony Carlisle, the present President of the Royal College of Surgeons, is a native of the county of Durham. He is a descendant of an ancient noble family; Sir James Carlisle having married Margaret Bruce, whose successors obtained a peerage, with the barony of Tortthorald. He is the third of four sons, and was born in 1768. His professional education commenced with an uncle at York; upon whose death he was transferred to Mr. Green, founder of the hospital in the city of Durham. Having here acquired general information preparatory to the more particular study of his profession, he came to London, and attended the lectures at the Hunterian school, under Mr. Cruikshank and Dr. Baillie, where his diligence and ingenuity soon attracted the attention of the celebrated John Hunter, so that a proposition was made to Mr. Carlisle to conduct the dissections, and undertake the arrangement of his museum. This, however, was not accepted, and Mr. C. became a resident pupil of Mr. Henry Watson, at that time one of the Court of Examiners, and one of the Surgeons to the Westminster Hospital. Upon the decease of this gentleman in 1793, Mr. Carlisle became his successor at the hospital. Of this institution, the oldest of the kind in this country, supported entirely by voluntary contributions, he is now the senior surgeon; and the whole of his life, as the following narrative will shew, has been devoted to the performance of the duties connected with his profession. He for many years delivered regular courses of lectures on surgery, and he continues to give clinical lectures to the pupils of the Westminster Hospital. Upon the minds of the students he has always been anxious to impress the necessity of attending to the ordinary duties of their profession, and repressing the zeal which usually animates them in search of the severer operations of

surgery. This practice is of little service to the pupil as an operator himself, and is detrimental to him as a general practitioner, as he must unavoidably neglect those cases, which, from their frequent occurrence, are of more importance in his avocations. He has urged, with no less force than propriety, the advantages arising from the skilful application of bandages, or the neatness and precision with which ordinary phlebotomy should be practised. Of these every by-stander is capable of forming an opinion; and not unfrequently the fame and fortune of a surgeon will be found materially to rest upon such circumstances. Sir A. Carlisle is the first to have introduced the important practice of public consultations upon the propriety of operating at the Westminster Hospital; a practice which has been found to be productive of very beneficial results, and to have been since adopted at various other similar establishments. He has ever professed his anxiety to advance his profession, and the interests of humanity. With the most laudable motive, he submitted, in 1829, a plan relative to the publication of hospital reports, to be collected together from all general medical hospitals, metropolitan and provincial, and addressed to the Royal College of Surgeons, and published by them half-yearly. The plan, however, was not supported by his colleagues in the council, and fell to the ground. The separate publication of the Reports of St. Thomas's and Guy's Hospitals, and the establishment of provincial journals, have, in some measure, though imperfectly, supplied the desideratum Sir Anthony pointed out.

The importance of comparative anatomy and physiology, in an inquiry into the structure and functions of the human system, no one of the present day will for a moment question, yet few are to be found who have sufficient leisure to devote from the more active pursuits of the profession, to obtain that particular knowledge which is essential to the elucidation of general views connected with medical science. Sir Anthony is one of the earliest labourers in this field in this country; and he appears to have been animated by the spirit of Hunter, and to have recognized with ardour the glorious career of that most distinguished naturalist and physiologist. The papers he has published in the Transactions of the Royal, (of which he became a Fellow in 1800,) Linnæan, and Horticultural Societies, afford evidence of the truth of this remark. In the Philosophical Transactions some communications of importance have appeared: the first is entitled, "An Account of a Peculiar Arrangement in the Arteries distributed on the Muscles of slow-moving Animals."*

* Phil. Trans. 1800 and 1804.

In the year 1799, John Symmons, Esq., F.R.S., presented to Mr. Carlisle a maucauco for dissection. It was the species known to naturalists as the Lemur tardigradus, remarkable for the slowness of its movements. Its blood-vessels being injected, a very extraordinary distribution of the arteries was observed, differing very materially from the ordinary course in animals generally. The deviation was observable in the axillary and iliac arteries; the main trunks supplying the extremities. At their entrance into these parts of the animal, the trunk of the vessel did not branch out in an arborescent form, but immediately divided into a number of equal-sized cylinders, which occasionally anastomosed with each other. They were all directed to the muscles or moving organs; and our anatomist counted twenty-three of these cylinders in the fore, and seventeen in the hinder limb. This discovery was so remarkable, that Mr. C. was almost disposed to consider it as an accidental variety, and therefore did not attempt any physiological explanation of such a condition, until he should have had opportunities of observing the structure of the arteries in some other animals of similar habits. The Bradypus tridactylus, or great American sloth, was found to have a like distribution; and the communications between the cylinders in this animal were found to exceed in number those of the Lemur tardigradus. No less than forty-two separate cylinders were counted upon the superficies of the brachial fasciculus; and these did not constitute the whole of the number which existed there. The arteries of the lower limbs were less divided, and of larger diameter; thirty-four branches only were detected in the middle of the thigh. The Bradypus didactylus is a quicker-moving animal than the tridactylus, and the arteries were found to be less divided. The effect of such an arrangement of the arteries must be to retard the velocity of the circulating fluid: and this is, in the animals mentioned, in relation to the muscles of their limbs. Mr. Carlisle was not clear as to whether the slow movement of the blood sent to these muscles was a subordinate convenience to other primary causes of their slow contraction, or whether it formed of itself the immediate and principal cause. The relation of the vascular system to the operation of muscular contraction is not yet sufficiently ascertained. It is, however, obvious, as Mr. C. at once saw, that the effect of this peculiar distribution was to enable the animal to cling to the boughs of trees, &c. for a great length of time; to accommodate itself, in short, to the habits of life of the animal, which give occasion for the long-continued contraction of some of the muscles of their limbs, for these animals have been known to cling to trees for several hours without changing in any way their position. The author of this anatomical discovery has not lost sight of something analogous

remarked in the carotid artery of the lion, known by the name of the *rete mirabile*, and described by Galen; and by which it is presumed the animal is enabled firmly to hold his prey for a great length of time without fatiguing the muscles of his jaws, to which these blood-vessels are transmitted. Examination of the arteries supplying the muscles of the jaws of the ruminating and the carnivorous animals, proved them to be arborescent, and did not therefore maintain the conjecture which had been carefully thrown out. The *rete mirabile*, and the circuitous course of the vessels going to the brain, appeared to check the velocity of the blood going to that organ. Many slow-moving muscles are found to be furnished with long cylindrical arteries; and in the heart, whose muscular motions are of exceeding rapidity, they are more quickly subdivided than those of any other part of the body. A greater collection of facts is necessary before the subject can be considered as satisfactorily accounted for.

Sir A. Carlisle has given an account of "A Monstrous Lamb."* The peculiarity relates to the formation of the head, and the absence of cerebrum.

In 1804 he wrote the "Croonian Lecture on Muscular Motion."†

The papers above noticed have shewn how the author's attention had been directed to the connexion between the conditions of the vascular and muscular systems; and this lecture is directed to a consideration of this subject, as well as the dependence on the respiratory and nervous systems. The changes which take place during the contraction or relaxation of muscles, are exceedingly difficult of solution. Many physiologists have endeavoured to account for them in various ways, but hitherto the subject may be regarded as an unsettled one in physiological science. It is, therefore, highly important to collect facts, and to institute well-arranged experiments; and Sir A. Carlisle has at least the merit of having aided in the research. His experiments to shew the properties of the irritable muscular fibre, and on the cohesive attraction of muscles, are very interesting. In a second Croonian Lecture, the arrangement and mechanical action of the muscles of fishes were particularly considered.‡

Physiology of the Stapes.§ This is an attempt to illustrate some circumstances connected with the organ of hearing, from an examination of one of the bones of the ear, in man and various animals. In man it is exceedingly minute, measuring only, according to Sir A., $\frac{6}{40}$ of an inch in height, and $\frac{5}{40}$ in breadth at the basis, and weighing only $\frac{1}{32}$ of a grain. In this paper, Sir Anthony displays the discovery of an osseous bolt, which

* Phil. Trans. 1801. † Ibid. 1804. ‡ Ibid. 1806. § Ibid. 1805.

he calls pessulus, passing between the arch of the stapes in several animals, viz. the guinea-pig, the mole, &c.

"Account of a family having hands and feet with supernumerary fingers and toes."* No subject is more difficult of solution than the hereditary transmission of peculiarities from parents to their offspring. All the processes connected with the generative functions are enveloped in much obscurity; and it is important to collect and accurately record all the variety of phenomena observable in the reproduction of the species. The supernumerary fingers and toes, in the case narrated by Sir Anthony Carlisle, had been traced to occur even to the fourth generation; and what is rather remarkable, both the male and female branches of the original parent were capable of transmitting the peculiarity.

In the Linnæan Transactions † are, "Observations on the Structure and Economy of those Intestinal Worms called Teniæ," in which an ingenious attempt is made to explain the mechanism and physiology of those curious animals. Their food the author presumes to be the chyle, and their structure, therefore, peculiarly simple, inasmuch as no complication of digestive apparatus is necessary for assimilating nourishment already prepared for them.

In the Horticultural Transactions, Sir Anthony Carlisle has printed some "Preliminary Observations to the second volume of the Transactions;"‡ also an "Account of a Walnut Tree which bore fruit at an early period from seed;"§ and "On the connexion between the leaves and fruit of Vegetables."‖

The earliest production of Sir A. Carlisle's pen appears to be the relation of a "Case of unusual formation in a part of the brain."¶ The falciform process of the dura mater was deficient, a very uncommon, if not unique occurrence. The brain was not divided into hemispheres as usual, but completely formed of one substance. No peculiar condition or character of intellectual power was observable in this case during life; the functions of the organ appear to have been exercised as in the ordinary conformation of that most important part of the human frame.

In the Medical and Physical Journal are seven papers:—"1. A new method of applying the tourniquet to restrain arterial hæmorrhages from the lower extremities."** 2. "Account of the use of an instrument for

* Ibid. 1814. † Vol. ii. ‡ For the year 1814.

§ Ibid. ‖ Hort. Trans. 1816.

¶ Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, Vol. i. ** Vol. i. p. 23.

cutting the cornea in the operation of extracting a cataract;"* this is of Parisian invention; it is open to objection, and less preferable than the mode now adopted by all expert operators. 3. "Description of the use of the Bistoire Caché for Lithotomy." † The improvements in modern surgery, and the able employment of the knife by most operators, have superseded the use of this instrument in one of the most important of surgical operations. 4. "On the indiscriminate use of bougies armed with caustic." ‡ 5. "Observations on Simple Fractures, where the union fails." § The deficiency of ossific union is imputed by the author to a sluggish and inactive condition of the vascular system; and he suggests the necessity of watching the progress of inflammatory symptoms, and moderating them only when actually present, rather than anticipating their appearance; and after the thirtieth day to commence with a generous regimen. 6. "On the Radical Cure of Bubonocele." ‖ 7. "Case of Strangulated Umbilical Hernia." ¶

In the 7th volume of "Medical Facts and Observations," Sir A. Carlisle printed some "Observations on the nature of Corns, and the means of removing them." A large proportion of the misery we endure, as well as the happiness we enjoy in this world, is occasioned by trifles; and this observation is strikingly illustrated by the subject of this paper. Continued pressure calls forth the protecting power of nature; and thus by the formation of successive layers of cuticle, a corn is produced. The degree of pressure occasioned by this thickening, however, disturbs the formation of the true skin beneath, sinks below its proper level, forms a cone which presses upon the sensible parts, and occasions considerable pain and inconvenience. Sir Anthony recommends dissolving the corn by warm applications, followed by the caustic alkali. He recommends blistering where the corns are soft, that is, when they occur at a perspiring surface.

In the New Medical and Physical Journal,** Sir A. has given a "Description of the Symptoms and Treatment following the Bite of a Viper." In the London Medical Repository are six papers. Four of these comprise "Observations on the Properties and Uses of Cathartics;" †† and embrace a practical and theoretical statement of the different kinds of cathartic medicines, probably the most important remedial agents in the whole Materia Medica, possessing various powers, and adapted to very different circumstances, though too frequently administered without due regard to their qualities, or discrimination as to their effects. The fifth paper ‡‡ consists of "Remarks on the present unsettled state of opinion about the

* Ib. p. 332. † Vol. iii. p. 193. ‡ Vol. iii. p. 289.
§ Vol. vi. p. 201. ‖ Vol. ix. p. 396. ¶ Vol. xii. p. 337.
** Vol. i. p. 89. †† Vol. i. pp. 97, 185, 277, 453. ‡‡ Vol. vii.

Venereal Disease." After noticing a variety of appearances of a doubtful nature, as characteristic of the disease, and shewing its manifestation under different forms, the author very justly enters his protest against the modern subdivisions of surgery for the pretended special treatment of particular disorders. It is a "quackish delusion," foreseen by the great Lord Bacon, who says, "And in particular sciences, we see, that if men fall to subdivide their labours, as to be an oculist in physick, or to be perfect in some one title of the law, or the like, they may prove ready and subtle, but not deep or sufficient, no, not in that subject which they do particularly attend, because of that consent which it hath with the rest." The other paper consists of "Facts and Observations relative to the connexion between Vascular and Extra-Vascular Parts, in the structure of living organized bodies.* In this memoir the author purposely avoids going into any metaphysical disquisition as to the mystery of vitality, confessing himself wholly incompetent to reduce that power within the rules of physical science. He is satisfied with attempting to benefit physiology, by establishing accurate discriminations between the several substances of living bodies, especially as to the relative dominion of vitality or of physical causes on those substances respectively.

A series of preparations illustrative of the union between vital and extra-vital parts, as exhibited in the testaceous tribe of animals, has been deposited by the author in the Hunterian Museum, and will amply repay the student and the naturalist for any trouble in their investigation. By extra-vital, Sir A. C. means those parts of organic bodies which have no power of self-repair, which hold no continuity with the circulating fluid material destined to replenish the waste, to augment the bulk, or repair the accidents of the living fabric.

In the London Medical Gazette for March 8, 1828, there is a paper on Erysipelas. Sir A. looks upon this disease as "a humoral and constitutional inflammation, occasioned by alimentary crudities, because certain vegetable acids and acidifiable viands are often the notorious antecedents of the disease." This paper presents the results of a long and extensive practice, and contains some very judicious remarks on the subject of diet.

In Nicholson's Journal there is a paper on "Galvanic Electricity, and its Chemical Agencies."† This was published in July, 1800. Sir A. C. had obtained from Sir Joseph Banks a perusal of a part of Signor Volta's paper, describing the formation of what is now well known as the Voltaic Pile, and, with Mr. Nicholson, he proceeded to make some experiments with an instrument composed according to the direction of the Italian pro-

* Vol. iv. pp. 89, 166. † Vol. iv. p. 179. 4to. edit.

fessor. The pile was placed upon the gold-leaf metrometer, but no signs of electricity appeared. The action of the instrument was observed to be freely transmitted through the usual conductors of electricity, but stopped by glass and non-conductors. Very early in this course, the contacts being made sure by placing a drop of water on the upper plate, (Mr. N. remarks,) that Mr. C. observed a disengagement of gas round the touching-wire. This appeared to Mr. N. to have the smell of hydrogen whenever the wire of communication was of steel. The experiment was varied, and the circuit was broken by the substitution of a tube of water between two wires. A compound discharge being applied, so that the external ends of its wire were in contact with the two extreme plates of a pile of thirty-six half-crowns, with the correspondent pieces of zinc and pasteboard, a fine stream of minute bubbles immediately began to flow from the point of the lower wire in the tube which communicated with the silver, and the opposite point of the upper wire became tarnished, first deep orange, and then black. Experiments of this nature having continued, two-thirtieths of a cubic inch of gas was obtained, and this being mixed with an equal quantity of air, it was exploded by the application of a lighted waxed thread. Other instances of the decomposition of water are given in this paper, to which the reader is referred for much curious and interesting information. Here it is proved, that Sir A. C. was not only the first to observe the chemical effects of galvanism, but also to indicate the future applications of that agent.

"On the Discoloration of Silver by Birds' Eggs."* The sulphuretted hydrogen gas, to which this effect is attributable, Sir A. found could not be formed by the albumen of eggs without the addition of water.

The Philosophical Magazine contains papers "On the Breeding of Eels,"† and "A Tabular View of the State of Health of the Workmen employed by the Commissioners of Sewers in Westminster."‡ From this statement, the men generally do not appear to have suffered from their occupation beyond the casual occurrence of accidents.

To the newspapers of the day, Sir Anthony has made several communications of interest. These are principally addressed to the Times, and embrace the subjects of the Salt Duties—the Importance of Salt to the Health of Human Beings—Military Flogging—Hygæian Quackery, &c. The following deserves to be particularly attended to: "A Letter to Lord Robert Seymour, on the Establishment of a County Pauper Lunatic Asylum." The suggestions contained in this paper, unfortunately, have not been adopted. Until insanity is looked upon and treated as fever, or any other disease, it is

* Ibid. vol. v. p. 178. † Vol. lix. Feb. 1822 ‡ Ibid. 1832.

likely we shall remain ignorant of the proper modes of treatment. Sir A. proposed that the asylum should be open, like other public hospitals, for the instruction of pupils, and the public communication of the methods of practice adopted. Every physician, surgeon, or apothecary possesses the power, by their signature, of consigning a fellow-creature to the confinement of a mad-house, yet there are no public institutions in which instruction relative to insanity is to be obtained. No one will question the importance of this subject, and no one will deny the difficulty attendant upon determining the physical as well as moral treatment necessary to be pursued in cases of mental derangement.

In the Archæologia are two papers; one, "A Description of Five Maces discovered on the capture of the Fort at Agra;" the other, "An Account of some Coins found in certain Tumuli in the Southern District of the Peninsula of India,"‡ in which paper Sir A. C. points out the methods used for raising huge stones, such as those at Stonehenge.

Sir Anthony Carlisle has made several communications to the publications of various authors. The subject of Hydrophobia has engaged his attention, and in Mr. Gillman's essay on this subject will be found a case of this horrid disease, which occurred in a little girl three and a half years old. It is exceedingly well related, and presents a case of canine madness completely uninfluenced by moral causes. In the same work is a relation of the symptoms observed in a rabid dog. In an oration delivered before the Medico-Botanical Society, are some judicious observations on the importance of attending to medical botany, and in "Enquiries into the effects of fermented liquors," some remarks on diet and regimen observed in training pugilists, or persons for athletic games, &c. Sir Anthony Carlisle has also made many valuable contributions to the illustrated catalogue of the Hunterian Museum, particularly on the subject of the comparative anatomy of the organ of Hearing. The plates were engraved at the Author's expense, and are admirably adapted to their object. They were originally intended to accompany an essay on sound, and on the organs of hearing generally, which formed part of a course of lectures delivered by Sir Anthony Carlisle, when Professor of Anatomy and Surgery to the Royal College of Surgeons, in 1818. An abstract of this essay is affixed to the illustrated catalogue, and our Author's views on the subject of sound in reference to the Stethoscope may be seen in Dr. Wolff's "Treatise on the use of Auscultation," lately published.—It remains to notice the works separately published by Sir Anthony Carlisle. These consist of:—

* Vols. xvi. & xxii.

1. An Essay on the Disorders of Old Age, and on the Means of Prolonging Human Life." The first edition appeared in quarto, in 1817, the second in octavo, in 1818. This Essay is principally addressed to the Aged, and is chiefly intended to point out the diet most proper to the advanced period of life, as want of attention in this respect frequently abridges the duration of existence. The author inclines to the opinion, that the disorders of senility may often be relieved, and human life prolonged beyond the ordinary time, by judicious management. This is comprised in the regulation of diet, clothing, exercise, and air, rather than by the employment of drugs or pharmaceutical preparations. The commencement of old age, Sir Anthony Carlisle fixes at sixty. At this period he thinks some symptoms of disorder usually manifest themselves. These are chiefly connected with the function of digestion; hence the importance of dietetic precepts. For these, and the several modes of treatment adapted to the various disorders incidental to age, the reader is referred to the "Essay," which concludes with some observations upon a subject of great importance:—"The Moral Propriety of Surgical Operations upon Old Persons." This is a question in medical ethics deserving of the serious attention of every practitioner. Sir Anthony Carlisle justly remarks, that dangerous operations are rarely advisable in advanced age, because the living powers are then diminished, and old persons are seldom exempt from constitutional disorders.

2. In 1829, Sir Anthony Carlisle submitted a Paper to one of the Evening Meetings of the Royal College of Physicians, being an account of an "Alleged discovery of the use of the Spleen, and of the Thyroid Gland." The physiology of these organs has engaged the attention of all anatomists, and still remains in obscurity. Our author's object was to demonstrate the connexions, and the physical effects produced by these organs upon more important contiguous parts, and thus to offer an explanation of their respective offices. The quantity of blood sent to the spleen has always been remarked, and some peculiar secretion has been sought for, to explain its use; but no excretory duct has been found. Sir Charles Bell has well said, that "The spleen is privileged ground for speculation," and a history of the various opinions that have been entertained, would be more amusing than useful. The spleen has been compared to a sand-bath, fitted to foment the stomach, and promote the digestion. It has been regarded as the organ to secrete an acid juice, and so excite an appetite—it has been looked upon as the seat of the soul!—the cause of venereal desire—the receptacle of a ferment—the seat of luxury—the abode of joy, or indolence, or sleep, the seat of melancholy,

"that moping here doth Hypochondria sit,"

or, "Laughter holding both his sides."

And Sir Charles Bell tells us we have authority for the excision of the spleen from those who are otherwise incurable in their propensity to laughter. Hewson imagined that the spleen added the flat vesicle of the globules of the blood; and another opinion has been, that it counterbalanced the mass of the liver seated to the right side of the abdomen. It has been considered as preparing the blood for the secretion of the bile; but Doctor Saunders made some experiments which appear to shew that the bile in animals from whom the spleen has been removed, is not different from those in whom it remained; and that the liver, in the exercise of its function, is perfectly independent of that viscus. Dr. Haighton's experiments confirm these views. Some physiologists have modestly asserted that the spleen was of no use at all, and they have founded their opinion upon the absence of any ill effects following its extirpation in animals. It has been removed from man himself. At the battle of Dettingen a soldier had his side pierced by a bayonet; he lay during the night on the ground, and when discovered by the surgeon in the morning, the spleen was found hanging out of the abdomen. It was so much enlarged, that the surgeon thought proper not to return it, but removed it, and no inconvenience was afterwards experienced in the animal functions. The majority of physiologists favour the opinion of its being an organ subservient to the stomach. Sir C. Bell looks upon it as a provision for giving the vessels of the stomach an occasional power and greater activity, enabling them to pour out a quantity of fluid proportioned to the necessity of the digestion. Dr. Rush regarded the spleen as an organ of defence against the effects of sudden accident upon the important viscera of the abdomen. Sir A. Carlisle's opinions accord most with those of Dr. Stukeley as to the physiological influence of the organ; but they differ as to the parts upon which that influence is bestowed, and the effects produced. The temperature of animal bodies is regulated by the proportion of red blood circulating through them. An unequal dispensation of animal heat, Sir A. remarks, exposes many parts to a passive reduction of temperature; the effects of which are, a dimunition of sensibility, and an abatement of muscular power. By the introduction of cold drinks and food, the stomach appears to be peculiarly subjected to change of temperature; and our author views the spleen as the organ for compensating heat, and the natural provision against the torporizing influence of low temperature suddenly applied to the nervous and muscular structures of the stomach. He has pointed out the constant alliance between temperature and the sensorial functions and muscular motions, and called to his aid many ingenious illustrations derived from his extended knowledge of comparative anatomy. The thyroid gland

is similar in its structure to the spleen; and its office he regards as of a similar character. He considers that "the local adaptations of the thyroid gland to the trachea and larynx, must necessarily furnish heat to the nerves and muscles of the organ of voice, whose bloodless cartilages are exposed, both within and without, to the effects of atmospheric changes."

3. In 1826, Sir A. Carlisle addressed a "Letter to Sir Gilbert Blane on the employment of Blisters, Rubifacients, and Escharotics," and recommended an instrument called "the Blisterer," adapted to transmit a defined degree of heat to effect these several purposes.

Sir A. Carlisle has delivered two "Hunterian Orations;" the first in 1820, the second in 1826. The former is dedicated to George IV., to whom Sir Anthony was Surgeon Extraordinary. In this he sagaciously predicts that which is now being rapidly fulfilled, and will be best expressed in his own words:—"The constitution of organized bodies is yet imperfectly understood; but, if we patiently wait until the inward history of living creatures is more extensively shown, and until chymistry has developed the essentials of their composition, we or our followers must be rewarded by more satisfactory views:" and in allusion to the Hunterian museum, to which so many additions have been since made, he remarks, "It may be the destiny of this college to execute the glorious scheme of Aristotle; to draw together the creatures of the earth; to unravel their natures, and to display with perspicuity their several applications for the services of all sensitive beings." Few members of the College are better, if so well adapted to display the importance of a knowledge of natural history in connexion with anatomical and physiological science. Sir Anthony from his earliest days has been a devoted enthusiast in the examination of the treasures of nature in all her kingdoms, and an active seeker into the mystery of her operations. He is, therefore, well calculated to do justice to the merits and views of John Hunter. His knowledge of the complex phenomena of living bodies, and the difficulty of tracing the causes which regulate them, led him to insist upon the necessity of making examination into the diversity of textures observable throughout the animal kingdom, and carefully distinguishing the supposed connecting links by which they are severally bound together. "In some animals (he observes) the parts ordained to perform definite offices, are simple, distinct, and homogeneous; in others, they occur intermixed with adventitious, auxiliary, or subordinate structures; so that nothing short of a copious and particular knowledge of these facts can warrant any physiological theory. The whole of these contemplations invariably lead to conclusive proofs of the strict adaptation between animal structures and their functions; and while the

wisdom of this moral governance, and the supreme order of Providence command our adoration, we may be permitted to advance our researches and cogitations respecting those natural events, which comprehend the most important information for the improvement of surgery." The second Hunterian oration relates to the connexion between vascular and extra-vascular parts.

From the preceding statement, it will be evident that Sir A. C. has for many years been ardently and usefully engaged in professional researches. He has for many years been one of the Council of the Royal College of Surgeons, one of the Board of Examiners, and one of the Curators of the Hunterian Museum. He has been one of its Professors of Anatomy and Surgery, and in 1829 he filled the office of President. He occupies the same distinguished position at the present time. He has for many years been one of the Surgeons of the Westminster Hospital, and was Surgeon Extra-ordinary to his late Majesty George IV., from whom he received the honour of knighthood at the first levee of that monarch, he being recommended for that honour by the privy council, on the ground of his professional merits. He was also appointed surgeon to the late Duke of Gloucester, at a personal interview, to which he was introduced by the learned Dr. Samuel Parr.

He has enjoyed an extensive practice, and his experience has enabled him to make many improvements: one, not the least in importance, has been in the alteration of some of the instruments used in surgical operations, and it should be known, that to Sir Anthony's ingenuity and application we are indebted for the introduction of the present excellent amputating instruments. He first substituted the thin-bladed, straight-edged amputating knife, approaching, in its kind, to the ordinary carving knife, for the clumsy crooked knife of former days; and also was the first to employ the carpenter's saw, simple in its construction compared with that formerly employed. He was the first to use the Bistoire Caché in this country, and he has, by the aid of Mr. Stodart, introduced various improvements in surgical apparatus. The ingenuity of Sir Anthony in early days enabled him to accomplish what Mr. Hunter considered to be a desideratum in anatomical research. He succeeded in making the first perfect cast of the labyrinth of the ear, and had the gratification of presenting the model to that celebrated man, who was highly delighted with the acquisition.

But Sir Anthony's labours have not been confined to the application of anatomical science to the relief of the diseases and disorders of mankind: he has considered it in relation to the arts of design, and the display of taste by painters and sculptors. In 1808, upon the death of Mr. Sheldon, Sir Anthony succeeded him as Professor of Anatomy to the Royal Academy.

The first professor was Dr. William Hunter, who was succeeded by Mr. Sheldon. Sir Anthony was, therefore, the third anatomical professor of this institution. He held the appointment for sixteen years, varying the courses every year, but devoting the first two lectures to an especial exposition of the connexion between anatomy and the fine arts, embracing a philosophical view of the passing state of anatomical knowledge. Upon his retirement he carried with him the good wishes and sincere thanks of all the members of the Academy, who, to testify the sense they entertained of his distinguished services, presented to him a handsome salver, with the following inscription: viz. "Presented to Sir Anthony Carlisle, Kt. with the unanimous thanks of the President and Members of the Royal Academy of Arts, for the zeal, attention, and ability with which, during sixteen years, he fulfilled the duties of Professor of Anatomy to that institution, and as a Testimony of their respect and esteem. London, 1825."

Sir Anthony had been admitted a student at the Royal Academy upon the recommendation of Sir Joshua Reynolds, given in consequence of a conversation which took place at the celebrated painter's one evening, between Sir Joshua, Mr. Hunter, Mr. Burke, and Mr. Carlisle. By this, he became the fellow-student of Hoppner, Westall, and other justly celebrated artists. In the periodical called "The Artist," Sir Anthony printed an "Essay on the Connexion between Anatomy and the Fine Arts," the object of which is to show that minute details of human structure are not necessary in historical painting and sculpture. The dissection of human bodies was not permitted at the period when the Greek schools enjoyed their greatest popularity, and had reached their highest excellence. When the fine arts flourished most, anatomy was not cultivated by artists as a particular object of study. Sir Anthony regards anatomy as principally useful to the artist by fixing his attention upon the most difficult of all the forms in nature—those of the human body. "Anatomy (he says) is subservient to precision and truth in design; it may secretly give correctness to drawing, but, if urged further, it will create disgust."

It is to be regretted that neither the lectures delivered at the Royal Academy or the Royal College of Surgeons, have been published. To the merits of the latter, many have borne their testimony, particularly his learned and eloquent colleague, William Lawrence, Esq., in his lectures on Physiology, Zoology, and the Natural History of Man, (pp. 40—678.)

The Portrait prefixed to this Memoir was painted by Sir M. A. Shee, P.R.A., at the time Sir Anthony was Professor of Anatomy at the Royal Academy.

Wm Clarke

SIR CHARLES MANSFIELD CLARKE, BART.

M.D. F.R.S. ETC. ETC. ETC.

"Rite maturos aperire partus."—HORAT.

WHATEVER relates to the condition, safety, or happiness of that sex so beautifully described by the immortal poet as,

> ——————————— "last and best
> Of all God's works, creature in whom excell'd
> Whatever can to sight or thought be form'd
> Holy, divine, good, amiable, or sweet!"

and upon whom our greatest happiness may justly be said to depend, must merit the deepest attention and regard. The study of midwifery claims for its assistance the sciences of anatomy, physiology, surgery, and medicine, inasmuch as they relate to the formation and growth of the fœtus, the changes which the several organs undergo during the process of gestation, and the various diseases incidental to the gravid state and to the earliest days of the infant. It is a branch of the most intense interest—involving, as it does, the safety of the fairest and most amiable part of creation. It was a study deemed by the ancients not unworthy of their regard. Hippocrates wrote several treatises on this subject:—*De Morbis Mulierum; De Superfœtatione; De Virginibus;* &c. Aristotle, Galen, Ætius, Albucasis Avicenna, and others, have followed this illustrious example. The first physiological work, however, of real value, relating to the origin and growth of the human fœtus, is to be found in the writings of the celebrated Dr. Harvey. That men of high and exalted attainments—such as possessed by those already named, and others of minor character, that might easily be enumerated—should have bent their thoughts to the subject of midwifery, cannot be a matter of surprise—seeing, as we do, that, in all ages, nature, however powerful in general, has not always been able to support and maintain her own laws; and that, but for the interposition and assistance of the medical practitioner, many individuals must have been lost to society. It has been well said, that no science leads us so immediately to a survey of our own origin as this; that it presents to our view the rudiments of the

fœtus, and shows how they gradually unfold themselves, in magnitude and figure, from conception to the time of birth; illustrating what Garth so well expressed in those memorable lines in "The Dispensary:"—

> "How the dim speck of entity began
> T'extend its recent form, and stretch to man.
> To how minute an origin we owe
> Young Ammon, Cæsar, and the great Nassau."

The French have excelled the English in the advancement of obstetric knowledge; and the labours of Paré, Guillemeau, Mauriceau, Deventer, and others, have justly become distinguished. They had lying-in hospitals established at a much earlier period than in England; and to the advantages of instruction offered by these institutions, must be attributed much of the perfection of the science of midwifery at the present day. Dr. John Moubray, the author of "The Female Physician, or the Whole Art of New Improved Midwifery," and "Midwifery brought to Perfection," was the first public teacher of midwifery in Britain, and delivered his lectures at his house in Bond Street; and Sir Richard Manningham, in 1739, established a ward or small hospital, attached to the Parochial Infirmary of St. James's, Westminster, for the exclusive reception of lying-in women; and this offers the first public hospital for obstetric cases in England.

It may not be unacceptable to the reader to have, in this place, some account of the earliest known work, in the English language, upon midwifery; the original manuscript of which, presented by the translator (for it is a foreign work) to Katherine, queen of Henry VIII., is in the possession of the writer of this Memoir. It is entitled, "The Byrth of Mankynde newlye translated oute of Laten into Englysshe. In the whiche is entreated of all suche thynges the whiche chaunce to women in their labor, and all suche infirmities whiche happen unto the Infantes after they be delyvered. And also at the latter ende or in the thyrde or laste booke is entreated of the conception of mankynde, and howe manye wayes it maye be letted or furtheryd, with diverse other frutefull thynges, as dothe appere in the table before the booke." Following this title is, "An Admonicion to the Reader: For so muche as we have enterprysed the interpretation of this present booke, offerynge and dedycatynge it unto our mooste gracious and vertuous Quene Katherin onely; by it myndynge and tenderynge the utilite and wealthe of all women, as touchynge the greate parell and dangours, whiche mooste comonlye oppresseth them in their paynfull labours. I requyre all suche men in the name of God whiche at any tyme shall chaunce to have this booke, that they use it godlye and onely to the profight of their neighbours,

utterly enschuynge all rebawde and unsemelye communicacion of any thynges contayned in the same, as they wyll answere before God; whiche as witnessyth Christ wyll requyre a counte of all ydell wordes, and muche more then of all rebawde and uncharitable wordes. Every thynge as saithe Solomon hathe his tyme, and truelye that is farre out of tyme, yea and farre from all good honestie, that some use at the commune tables, and without any difference before all companyes rudelye and leudelye to talke of suche thynges, in the whiche they ought rather to knowe muche and to saye littel, but onelye where it maye do goode, magnifyeing the myghtye God of nature in all his workes, cōpassionatynge and pytyinge oure even Christians the women whiche sustayne and endure for the tyme so greate dolor and payne for the byrthe of mankynde and delyveraunce of the same in to the worlde. Prayse God in all his workes."

After this "Admonicion" is the Dedication:—"Unto the most gracious and in all goodnesse most excellent vertuous Lady Quene Katheryne wyfe and most derely belovyd spouse unto the most myghty sapient Christen prynce Kynge Henry the Eighte Rychard Jonas wyssheth ꝑpetuall joye and felycyte;" in which the translator speaks of his original as being "a boke entitled *De Partu Hominis*, that is to saye, of the byrth of mankynde compyled by a famous doctor in Physyke, called Eucharius, the whiche he wrote in his owne mother tunge, that is, beynge a Germayne, in the Germayne speche, afterwarde by an other clarke, at the requeste and desyre of his frende transposed into Laten, the whiche boke for the singular utilite and profete that ensueth unto all suche as rede it, and mooste specially unto all women (for whose onely cause it was written) hathe ben sythe in the Doutche and Frenche Speche sett forthe and emprynted in greate nōber, so that ther be fewe matrones and women in that partes but (if they can rede) wyll have this boke alwayes in readynesse," &c. The work is arranged in three books, which are subdivided into chapters, and treats of various things relating to the formation, development, and bringing forth of the child, and of the diseases incidental both to the mother and child. The first book contains sixteen figures, representing the child in various positions, far more fanciful than true. The date of this MS. must be about the year 1540. A copy of the original work in German, by Eucharius Rösslin (little Rose), is in the possession of J. B. Inglis, Esq. No copy of the Latin edition, described as by Eucharius Rhodion, is to be met with in any of our public libraries. Dr. Denman, in the preface to his "Introduction to he Practice of Midwifery," notices the English work only, and states its publication to have been in 1540, and to have been executed by "Thomas Raynold Physition." The greater number of copies have the name of

this physician attached to them; and there are very numerous editions. That by Richard Jonas is exceedingly scarce, and it differs from that which bears the name of Raynolde. It is the first medical work which has prints reasonably-well executed from neat drawings.

Eucharius Rösslin, or Rhodion, as he græcised his name, a practice not uncommon in the sixteenth century, was a native of Frankfort on the Main, celebrated for his knowledge of botany, upon which science he published a work in folio, in 1533, and again in 1566. This work belonged properly to Cuba; and the only merit Rösslin has in the performance, is, having made additions to it, augmenting it by all that Jerome of Brunswick had published, and illustrating the whole by better figures. It is, strictly speaking, a kind of Hortus Sanitatis, treating alike of plants and metals useful in medicine, and is called "Kreuterbuch (Book of Plants) von aller Kreuter, Gethier, Gesteinen und Metal, Nutz und Gebranche." Eloy mentions* the work on midwifery, and gives as its title, "De Partu Hominis et quæ circa ipsum accidunt, adeoque de parturientium et Infantium morbis atque curâ libellus. Parisiis, 1535. 8vo.;" but he erroneously places the first German edition as belonging to the year 1532, four years posterior to the date of Mr. Inglis's copy. The writer of this sketch has examined this copy, and finds its title to be, "Der Schwanngeren frawen und Hebammen Rosegarten." A wood-cut, on the title-page, represents the mother in bed, attended by two females, whilst the infant is being bathed by the nurse. On the reverse of the title is also another wood-cut, representing the delivery. The work is dedicated by the author to Katherine of Saxony, Duchess of Brunswick and Lunenburgh, with "Ermannung zuden Schwangeren frawen und Hebammen," a poem in five pages, dated "Wurms, 20 Hornung, 1513," which may therefore be considered as the date of the earliest edition of the work. The cuts mentioned in the English copies are to be found in the original; the place of printing, and date of which, are thus expressed:— "Gedrückt und vollendet inn der Keyserlichen statt Augspurg, durch Heinrich Steyner, 19 Novem. 1528."

Raynolde's translation is to be regarded as different from that by Jonas, of which only one printed edition is mentioned by Ames as having been executed in 1540, and which is of exceeding rarity. Raynolde's first edition seems to be of the date of 1545, and is said to be printed by Thomas Ray. As he is not known as a printer, it is probably a contraction of the translator's name, and he may have undertaken the printing of the work. Of this translation many editions are extant, printed by Jugge, and other well-known

* Dict. Hist. de Medicine, ii. 166.

printers; and the work, according to Dr. Denman, was the text-book of midwifery for nearly a century.

From this digression let us now more immediately revert to the distinguished physician whose name is placed at the head of this article. With unmixed delight we must view the exercise of the talents of such men as William Hunter, Denman, Osborn, Smellie, Blundell, Merriman, Ley, and others, to the relief of the sufferings of women in the hour of childbirth. No names, however, stand more conspicuously among modern philanthropists of this class, than the Clarkes. Dr. John Clarke, an elder brother of Sir Charles, must here be specially mentioned. He was highly celebrated for his sound and judicious views in whatever related to the practice of midwifery, or the diseases of lying-in women and infant children. He brought to the exercise of a department, which had, in former times, been assigned chiefly to the care of women, a knowledge necessary to the practice of a physician. He laboured with assiduity to develope the mysterious processes of generation; and demonstrated that the consideration of these phenomena were connected generally with the functions of the animal economy, and equally worthy of the study of the philosopher and the physician. He was a fellow-student of Dr. Baillie, and attended the lectures of the Hunters. He studied midwifery under Dr. Denman and Dr. Osborn, and afterwards became associated with them as a lecturer in this branch of science. He rapidly attained to a most extensive practice, and published the following works:—

1. Province of Midwifery in the Practice of this Art disclaiming against Male Practitioners. 1751.—2. A Satirical Tract on the same Subject.—3. An Essay on the Epidemic Disease of Lying-in Women, of the Yaws, 1787 and 1788. 1788.—4. Practical Essays on the Management of Pregnancy and Labour, and on the Inflammatory and Febrile Diseases of Lying-in Women. 1793, 1806.—5. Commentaries on some of the most important Diseases of Children. 1815.—6. On the Effects of certain Articles of Food, especially Oysters, on Women after Childbirth. 1815.—7. History of a Fatal Hæmorrhage from the Laceration of the Fallopian Tube from the Case of an Extra-Uterine Fœtus. 1793.—8. Observations on the case of a Woman who died with a Fœtus in the Fallopian Tube. 1800.—9. Fatal Case of Hernia of some of the Abdominal Viscera strangulated in the Cavity of the Thorax. 1800.—10. Observations on the Management of Cases in which the Face of the Child presents towards the Os Pubis. 1800.—11. Description of an Extraordinary Production of Human Generation. Phil. Trans. 1793.—12. Of a Tumour in the Placenta. Ib.

The practice of Dr. John Clarke became too extensive for his strength, and it was necessary to lessen the fatigue of his professional labours; he therefore transferred to his brother (now Sir Charles Mansfield Clarke) a considerable portion of practice, which neither his health nor his time would allow him satisfactorily to execute. A facetious member of the medical profession, and a very worthy man, was pleased to sport, in what he called

"Nugæ Canoræ, or Epitaphian Mementos (in Stone-cutter's Verse) of the Medici Family of Modern Times," upon this circumstance, in the following ludicrous manner:—

> "Beneath this stone, shut up in the dark,
> Lies a learned man-midwife, y'clep'd Doctor Clarke.
> On earth while he lived, by attending men's wives,
> He increased population some thousands of lives:
> Thus a gain to the nation was gain to himself;
> And enlarged population, enlargement of pelf.
> So he toiled late and early, from morning till night,
> The squalling of children his greatest delight.
> Then worn out with *labours*, he died skin and bone,
> And his ladies he left all to *Mansfield* and *Stone*."

The anachronism in the last line must be regarded as a poetical license; since Mr. Stone, the son of Dr. A. D. Stone, Physician to the Charter House, and the nephew of Dr. John Clarke, was not at that time in practice. Dr. John Clarke died in August, 1815, aged fifty-six years. His death was caused by dropsy, the effect of organic change in the stomach. Had he lived, it is probable, he would have continued his valuable Commentaries upon some of the important diseases of children.

The success, unequalled success, of Sir Charles Clarke, is not, however, to be attributed merely to the celebrity of his brother. He possesses a quick and lively penetration, knowledge, and judgment, which deservedly render him a practitioner of the very first eminence. No other physician can quit London for five or six successive months, and return to exercise as much practice as he is disposed to accomplish. He may be said to enjoy the highest professional reputation. It has been earned and secured by a studious devotion to his profession, directed by all that is honourable and liberal towards his brethren and the public. It would be difficult to name a practitioner who is more generally esteemed and respected than Sir Charles Clarke. He is the son of Mr. John Clarke, of Chancery Lane, Surgeon; was born on the 28th of May, 1782, and received his classical education at St. Paul's School. His medical education was derived by attendance at St. George's Hospital, and from the Lectures on Anatomy, at the Hunterian School, by Mr. Wilson and Mr. Thomas. Also on Surgery, by Mr. Wilson; on Materia Medica, Chemistry, and the Practice of Physic, by Dr. George Fordyce and Dr. George Pearson; and on Midwifery, by his brother Dr. John Clarke. Having thus obtained all necessary preliminary knowledge of his profession in its various branches of study, he was admitted a Member of the Royal College of Surgeons, and spent two of the earliest years of his professional life as an Assistant Surgeon in the Hertfordshire Militia,

and in the Third Regiment of Foot Guards. He subsequently devoted his attention more particularly to the subject of midwifery, and to the diseases of women and children. He associated with Dr. John Clarke as a lecturer on these subjects, in 1804, and continued to deliver regular courses until the year 1821. For many years he held the appointment of Surgeon to the Queen Charlotte's Lying-in Hospital, which he resigned about the time he ceased to lecture; but the interests and welfare of the Institution still continue to be objects of his attention and regard. In the year 1825 he was chosen a Fellow of the Royal Society; and having, in the year 1827, become a Licentiate of the Royal College of Physicians, he was appointed, in the year 1830, Physician to the Queen Adelaide, on the accession of King William IV. to the throne of these realms. On September 30, 1831, he was created a Baronet; and in the year 1836 was elected, by the Fellows of the Royal College of Physicians, into their body.

Incessantly engaged in the performance of the active duties of a most laborious profession, Sir Charles has not had leisure for many literary productions. The excellence of that which he has published serves only to awaken our regret that he should not have written more. His works display acute perception, accurate observation, force and power of judgment, and prove their author to be the possessor of a vigorous and comprehensive mind. In the third volume of the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," Sir Charles has detailed a "Case of Sudden Death during Parturition; with an Account of a Singular Disease of the Uterus, which was discovered upon opening the Body." The peculiar condition here referred to consisted of numerous lacerations of the peritoneal coat of the organ, without any rupture of its muscular structure. The case is very difficult of solution. The preparation was preserved, and deposited in the late Mr. Wilson's museum. Our author does not undertake to explain the appearances presented in this case; he contents himself with shewing the inefficiency of any explanation afforded by the ordinary suppositions which naturally present themselves to the inquirer on the occasion. Very few cases of this kind are known: one occurred in the practice of Dr. David Davis, and is related by him in his "Principles and Practice of Obstetric Medicine," vol. ii. p. 1065. Mr. W. H. Partridge, of Birmingham, has also related a case, (Med. Chir. Trans. v. xix.) and Dr. John Ramsbotham has recorded one in his "Practical Observations on Midwifery," p. 409. The fleshy structure of the uterus did not seem to be implicated in the injury sustained in these cases.

Sir Charles Clarke has published a very important work, consisting of "Observations on some of the Diseases of Females." His object, one of

practical utility, is well and modestly expressed in his preface. It has appeared to him desirable, "to make some arrangement of the sexual diseases of the female; and to shew that diseases having some symptoms in common, are, nevertheless, very dissimilar in their character, and require very different treatment;" also, "to demonstrate the impropriety of designating diseases by names which do not convey a true idea of their character; and to point out the dangerous consequences of treating symptoms instead of diseases." His opportunities to do justice to the subject have been great:—extensively engaged with his brother in practice, connected with the school rendered illustrious by the names of Denman and Osborn, it was next to impossible that a mind so active, so inquisitive, and so powerful as that possessed by our author, should not have enabled him to give to the medical public a valuable addition to the branch of his profession to which his attention had been so especially directed. He has truly said, that, "in this work no more hypothetical reasoning has been admitted than was absolutely necessary. The author has endeavoured to confine himself to facts, and the simple narrative of them: he has no new theory to offer—no new medicine to propose, the virtues of which he is desirous of establishing." No quackery—nothing exclusive. No part of medical inquiry has needed more patient investigation than that to which Sir Charles has applied himself; no branch less perfectly understood by the profession at large; yet none involves more serious consequences from imperfect knowledge, as directed to the means of relief to be afforded. It would not be possible, within the limits of this Memoir, to give even an analysis of this work; which, it may be observed, consists of two parts; one of which was published in 1814, the other in 1821. They necessarily form an essential part of every medical library, and they cannot be too carefully studied. His pathological researches are directed to the most useful and practical object; and the simple and unadorned manner in which he has communicated his knowledge, and the results of his practice in the diseases of females, have been duly estimated by the profession, and have been beneficial to the relief of suffering humanity. Sir Charles Clarke brought to his aid an acquaintance with all that previous writers of authority on these subjects had handed down to us; he has refuted their errors, or established their conjectures. He has shewn the relation of the different parts to each other in the exercise of their functions, and the modifications of the symptoms characteristic of their diseases; and upon these just and philosophical views he has established a rational ground of cure. Whatever difference of opinion may be entertained as to the merits of the classification he has adopted, the work must be regarded by all as a most valuable contribution to medical science.

J. Locke

JOHN COOKE, M.D.

F.R.S. F.S.A.

"Placidaque ibi demum morte quievit." . . . VIRGIL.

DR. COOKE is descended, on the paternal side, from a highly respectable family in Edith Weston, in Rutlandshire, and, on the maternal side, from an ancient family, well known in Lancashire, of the name of Pilkington, formerly Pylketon. His maternal grandfather was a dissenting clergyman, who studied and took the degree of Master of Arts at Glasgow. Dr. Cooke was intended by his family for the church; and the earlier part of his education was conducted at a seminary founded by the pious and celebrated Dr. Doddridge, at Northampton. The preliminary part of his education being completed, he directed his views, however, to the study of medicine, a profession more congenial with his inclination; and his uncle, Mr. Stead, being at that time apothecary to Guy's Hospital, he entered as a physician's pupil, and attended the medical lectures of Dr. Saunders, and the chemical ones of Mr. Keir, also the anatomical of Dr. Mc Laurin and Sir W. Blizard, and the practice of Drs. Hinckley, Tomlinson, and Saunders.

From the hospital he went to Edinburgh, the chief school of medicine, and there attended the classes of medical science then conducted by Drs. Cullen, Gregory, Black, and Monro. From Edinburgh he passed to Leyden, where he studied for nearly two years, and then took a degree of Doctor of Medicine. The subject chosen for his thesis on this occasion was *De Usu Corticis Peruviani in Morbis non Febrilibus.*

Upon his return to London, he was elected physician to the General Dispensary in Aldersgate-street, the first of the kind ever established, and the practice of which has always been of very considerable extent. A larger field, however, for the exercise of his medical talents soon presented itself, by his appointment to the London Hospital; and no physician can be said to have more satisfactorily performed the arduous duties attached to such a position, as respected the patients, the pupils, and the governors of the charity, than Dr. Cooke. The regularity of his attendance, his kindness and sympathy, and deep attention to his patients, and his readiness to give to the pupils every instruction the several cases demanded, ensured to him the good-will and esteem of every one connected with the institution. In addition to the clinical instruction given at the bedside of the invalids,

Dr. Cooke also delivered regular courses of lectures on the theory and practice of medicine, which embraced a clear and succinct view of the doctrines promulgated by different professors, illustrated by references drawn from his own observation and experience. The high classical attainments of Dr. Cooke enabled him to give to his hearers a complete and satisfactory statement of the doctrines of the earlier professors of the medical art; and it is much to be regretted, that the notes of these lectures, having been all written in short-hand, capable only of being read by the author, are thereby lost to mankind. Dr. Cooke lectured at the London Hospital, and performed the duties of physician to that institution upwards of twenty years. Upon his resignation, he received the thanks of all connected with the charity, accompanied by expressions of their deep regret at his departure.

His health, however, declining, his medical labours became restricted entirely to private practice. No one could enjoy in a higher degree the confidence of his patients; this will readily be conceived by all who had the happiness to be known to him, for his manners were those of a gentleman and a scholar, entirely devoid of pedantry, and marked by a kind and proper deference for the opinions entertained by others. Independent in every sense of the word, he was always ready freely to express, and manfully to maintain his opinions. An enemy to flattery, and little solicitous of popular applause, the course of study pursued throughout his whole life gave to him a tone of mind, a clearness of conception, and a consequent decision of character, highly to be envied, and much to be admired. He mingled largely in the society of men of all ranks, opinions, and pursuits, and all have been proud to consider him as their friend. With the late Dr. Matthew Baillie he was well acquainted. A most confidential friendship existed between those two celebrated physicians, with mutual advantage, for a great number of years. To Dr. Cooke were entrusted the revision and correction of several of Dr. Baillie's papers, and Dr. Cooke enjoyed the advantage of Dr. Baillie's remarks on his own "Treatise on Apoplexy, Palsy, and Epilepsy," which was highly approved by Dr. Baillie, and of which he justly predicted that it would be "a standard work."

Dr. Cooke, as before stated, graduated at Leyden, by which, upon settling in London, he could, according to the laws of the Royal College of Physicians, only become a licentiate of that body. But, among other powers vested in the president of this institution, is that of being able to nominate for election any one from the list of licentiates to become a Fellow of the College. Dr. Cooke's character and talents entitled him to this distinction. Few members of this learned body were his equals in classical

attainments, and none could exceed him in high moral qualities, in integrity of mind and heart, or in extent of practice and medical knowledge. The President, the late Sir Lucas Pepys, Bart., nominated Dr. Cooke, and in 1809 he was duly elected a Fellow.

In 1819, Dr. Cooke was appointed to deliver the Croonian Lectures at the College, and he chose for his subject one of the most interesting, but certainly most intricate, parts of the human frame—*the Nervous System.* Preparatory to the lectures on nervous diseases, he delivered some introductory discourses, giving an account of the opinions of ancient and modern physiologists, respecting the nature and uses of the nervous system; and a more ably stated case of this truly difficult subject, cannot be found. The plan adopted in this work, (for the lectures were published in two vols. 8vo. in 1820-3,) is highly worthy of notice, for, were it more generally followed up, it would necessarily reduce the number of volumes which it is now absolutely requisite to read, to arrive at just ideas of the knowledge professed upon any one subject of medical research. In this work the author has been at considerable pains to collect, to arrange, and to communicate all useful observations that have been made by the ancients and the moderns, upon the principal diseases of the nervous system. The late Dr. Thomas Young has done the same upon the subject of phthisis pulmonalis, and with equal ability. These are the only works of the kind we possess, embracing, within a reasonable compass, a well-digested and perfect summary of all that is known upon the subjects of which they treat. It would require many pages to give any kind of epitome of the contents of Dr. Cooke's work; it must be in the library of every man who feels an interest in his profession. The first volume is altogether on the subject of apoplexy; the second, on palsy and epilepsy. References are given to many sources whence opinions or information have been drawn; and to those to whom the dead languages are not familiar, or who have not the means of consulting the ancient authors, these volumes will prove very satisfactory; they are, indeed, alike useful to the student and the practitioner. They give not only the opinions of all preceding physicians and physiologists, but also the results of the author's own practice, which clearly demonstrate the patient and close attention he has paid at the bed-side of the sick; whilst the decisions at which he arrives, mark the solidity of his understanding, and the profundity of his judgment.

In 1830 the College elected him to deliver the Harveian Oration, which presents a specimen of most elegant latinity, as well as a judicious arrangement of subjects suited to such an occasion. His well-drawn character of his friend Dr. Baillie, will be noticed under the memoir of that distinguished

physician and physiologist: that on the labours of Harvey, is no less powerful and just.

In 1799, great alarm prevailed in the city of London, occasioned by the sudden death of two men who had been employed in landing some cotton; and from the manner of their decease, a suspicion was engendered that they had received the infection of the plague from the goods that had been imported. The fears of the government were excited, and the lord-mayor, at that time Harvey Christian Combe, was directed to order proper inquiries to be made upon the subject. His lordship applied to Dr. Cooke, who, having fully investigated the matter, drew up a report, which had the effect of completely tranquillizing the public mind on the occasion. Dr. Cooke was one of the Fellows appointed to superintend the publication of the Transactions of the College. He was a Fellow of the Royal Society, a Fellow of the Society of Antiquaries, and was, during the years 1822-3, President of the Medico-Chirurgical Society.

From declining health, he had, for ten years prior to his death, relinquished all practice, and, to the deep regret of a very numerous circle of enlightened and sincere friends, appeared very little in society; his time was, however, spent in the perusal of all that is elegant in literature, or valuable in science, for his mind retained its wonted vigour, though the weakness of the body necessarily limited the boundaries of social intercourse. For several months towards the close of his life, he laboured under considerable suffering, arising from an affection of the bladder, which, with other causes, gave rise to a most distressing nervous irritability, constituting that disease which the poet has so well described, and which he justly says,

"Claims most compassion, and receives the least."

Dr. Cooke, however, derived much relief from the attention of his medical friends, who were anxious to render him every assistance in their power, and soothe the last days of his existence. He felt much the loss of society, for during a long life he had mixed largely with the world, and enjoyed the company of the choicest spirits of the age. He died on the 1st day of January, 1838, having arrived, it is supposed, to the advanced age of eighty-six or eighty-seven. He retained his faculties to the last, occasionally indulging his passion for Greek literature; and the last exercise was probably the reading of a page or two to the writer of this sketch, from his favourite Glasgow edition of Homer, printed by Foulis, which he had interleaved, and enriched with many notes

Arthur Lee Jun Esqr

SIR ASTLEY PASTON COOPER, BART.

G.C.H. D.C.L. F.R.S.

SERJEANT-SURGEON TO THE QUEEN.

"A life well spent, whose early care it was
His riper years should not upbraid his green;
By unperceived degrees he wears away;
Yet, like the sun, seems larger at his setting."

BLAIR.

WAS surgery an art antecedent to medicine? is a question that has been frequently discussed. In the primeval ages of the world—when mankind lived in a state of nature, when exercise in the open air gave a relish to the enjoyment of simple food—robust and vigorous constitutions, and a proportionate absence of disease, must have been the result. One may easily suppose that the functions of the body would go on unimpaired by disease, and that life would at length become extinct only by a gradual and entire decay. But as no exemption to the consequences of accidental violence could be afforded, and, as in cases of wounds, where the cause and effect would be obvious to the external senses, and where the pain must have been both immediate and violent, there can be no doubt that aid would be instantly sought for. From these and other circumstances, it appears that surgery must be regarded as the primary, the most ancient branch of medicine. We have not, however, any authentic accounts of the mode of treatment in the first ages of the world, further than that they used to wash the wounded parts with warm water, to suck them clean, and to apply the juice of vegetables pounded, or steeped in wine, or water, oils, resin, the bark and roots of certain trees, and bandages. Eurypylus when wounded with an arrow, addresses Patroclus:

"But thou, Patroclus, act a friendly part,
Lead to my ships, and draw this deadly dart;
With lukewarm water wash this gore away,
With healing balms the raging smart allay,
Such as sage Chiron, sire of pharmacy,
Once taught Achilles, and Achilles thee."

Iliad, lib. iv. v. 218.

When Menelaus was wounded in the side by an arrow, Machaon, the son of the Grecian Æsculapius, after washing the wound, and sucking out the blood, applied a dressing to appease the pain, of the juice of roots bruised, the principal remedy then known. So again in the Iliad we read:

> "Then suck'd the blood, and sov'reign balm infus'd,
> Which Chiron gave, and Æsculapius used."

Considering the frequency of quarrels and bloody battles, which convulsed mankind in the most early periods of time, it has been well remarked, that one would expect to have seen surgery more progressive, from the experience which might have resulted, in consequence of the situation of the wounded and prisoners; but in these primeval times, when mankind were less civilized, and more weakly connected by the mutual obligations and ties of society, very little attention was given to captives, who were considered as the slaves of the conquerors. The mode of making war, too, among the ancients, was no less inhuman than fatal. The experience, however, which accidents or wars could afford, must have been very slow, for want of the collateral knowledge of anatomy, upon which the progress and improvement of surgery most essentially depends. In modern times it is not possible, perhaps, to name any one who has more powerfully contributed to the improvement of his science by the application of sound anatomical knowledge, than the respected individual whose name stands at the head of the present memoir. No one has reached a higher position in the profession, or maintained that distinction for so long a period.

The father of Sir Astley Paston Cooper was the Rev. Dr. Samuel Cooper, of Yarmouth, in the county of Norfolk. His mother, Maria-Susanna, sprung from the family of the Pastons, but was daughter of James Bransby, Esq. of Shottisham, in the same county, and known as the authoress of a novel called "The Exemplary Mother." Sir Astley is the fourth son of these parents, and was born at Brooke in Norfolk, August 23d, 1768. It is from the most laudable motives that we feel an anxiety to learn of the early life and dispositions of those who, by their talents and zeal, have proved themselves benefactors to science and mankind, for true it is, that,

> "——— The childhood shows the man,
> As morning shows the day." Milton.

In his boyhood, Sir Astley is said to have shown a bold and enterprising spirit; to have been remarkable for his social and friendly disposition, and for the animation with which he would enter into the sports of his juvenile companions. The village schoolmaster, Robert Larke, gave to him the

rudiments of his education in reading, writing, and arithmetic; but his classical knowledge was derived from the instruction of his father, a good scholar, and the Rev. Joseph Harrison. Many anecdotes have been related demonstrative of his intrepidity and enterprise, qualities for which his professional labours have been particularly distinguished.

Having received part of my professional education at the Borough hospitals, I am competent to speak to this point, from having witnessed, during several of Sir Astley's earlier years, the chief of the operations performed by him at Guy's Hospital. I can never forget the enthusiasm with which he entered upon the performance of any duty calculated to abridge human suffering. This enthusiasm, by the generosity of his character, his familiar manner, and the excellence of his temper, he imparted to all around him—the pupils imbibed the same spirit; and the extent of the obligations of the present and of after ages to Sir Astley Cooper, in thus forming able and spirited surgeons, can never be accurately estimated. He was the idol of the Borough school—the pupils followed him in troops, and, like to Linnæus, who has been described as proceeding upon his botanical excursions accompanied by hundreds of students, so may Sir Astley be depicted traversing the wards of the hospital with an equal number of pupils, listening with almost breathless anxiety to catch the observations which fell from his lips upon the several cases presented to his view. But, on the days of operation, this feeling was wound up to the highest pitch—the sight was altogether deeply interesting; the large theatre of Guy's crowded to the ceiling—the profound silence obtained upon his entry—that person so manly and so truly imposing—and the awful feeling connected with the occasion—can never be forgotten by any of his pupils. The elegance of his operation—without the slightest affectation—all ease—all kindness to the patient, and equally solicitous that nothing should be hidden from the observation of the pupils—rapid in execution—masterly in manner—no hurry—no disorder—the most trifling minutiæ attended to—the dressings generally applied by his own hand. The light and elegant manner in which Sir Astley employed his various instruments always astonished me, and I could not refrain from making some remarks upon it to my late master, Mr. Chandler, one of the surgeons to St. Thomas's Hospital. I observed to him, that Sir Astley's operations appeared like the graceful efforts of an artist in making a drawing. Mr. C. replied, "Sir, it is of no consequence what instrument Mr. Cooper uses, they are all alike to him; and I verily believe, he could operate as easily with an oyster knife, as the best bit of cutlery in Laundy's shop." There was great truth in this observation. Sir Astley was, at that time, decidedly one of the first operators

of the day, and this must be taken in its widest sense, for it is intended to include the planning of the operation, the precision and dexterity in the mode of its performance, and the readiness with which all difficulties were met and overcome.

From this digression, naturally occasioned by allusion to the intrepidity of Sir Astley in his youth, let us return to the course of his study. Having imbibed some portion of classical instruction, he was placed, at the age of fifteen, with Mr. Turner, a surgeon and apothecary, at Yarmouth, and in this manner he was introduced into that profession of which he was to become the brightest ornament. Having been a few months in this confined sphere, he came to London, and was bound apprentice to his uncle, Mr. William Cooper, one of the surgeons of Guy's Hospital; but with him he remained only three months, being then transferred, by his own desire, to Mr. Cline, the eminent surgeon of St. Thomas's Hospital. This connexion gave full scope for the display of his character, and afforded him every opportunity that could be given for obtaining information, directed by the guidance of a master distinguished by a truly philosophical mind and spirit, and of whom Sir Astley has always spoken in terms of the most profound veneration and regard for his private worth, and with the greatest respect for his knowledge, judgment, and ability as a surgeon. Sir Astley's labours in the dissecting-room were incessant—his attention at the hospital —his examination of accidents not less unremitting: and by this continual observation, united to his sound anatomical information, may be attributed the superiority he has justly acquired in forming a diagnosis upon the nature of accidents or disease.

In 1787, Sir Astley visited Edinburgh for a short time, and distinguished himself at the Royal Medical Society, though he had not yet reached twenty years of age. Upon his return to London, his master, Mr. Cline, who was the teacher of anatomy, physiology, and surgery at St. Thomas's Hospital, appointed him his demonstrator of anatomy, and soon after gave to him a part of the anatomical lectures. Sir Astley also gained Mr. Cline's consent, and that of the other surgeons of St. Thomas's and Guy's Hospital, to give a course of lectures on the principles and practice of surgery, which had previously only formed a part of the anatomical course, and these lectures were really the foundation of his fame and fortune. His class at first consisted of fifty students, but they increased to 400, which was by far the largest ever known in London, and he gave a share of these lectures to Mr. Travers, Mr. Henry Cline, and to Mr. Joseph H. Green, consecutively. A little practice soon rendered him a popular teacher. He made no attempts at oratory; but laboured to render the subject as plain and

intelligible as possible to his hearers—he did not distract them by the introduction of controversial subjects connected with physiological science.

His apprenticeship ceased in 1791, the year he commenced as a lecturer; and at the close of it, he married the daughter of Thomas Cock, Esq., of Tottenham, a distant relation of Mr. Cline: and to show how solicitous he was, never to neglect the performance of any public professional duty, it may be told, that on the evening of the day on which the marriage ceremony was performed, he delivered his customary lecture, without any knowledge of what had happened being communicated to his class.

In the year 1792 he went to Paris, and attended the lectures of Desault at the Hôtel Dieu, and those also of Chopart. The former of these was an excellent practical surgeon, and a man of acute mind; and Sir A. C. gained from him much of his knowledge of injuries of the head, which were at that time by far too frequently the subjects of surgical operations in London. He has often mentioned an anecdote of Desault, to show his acuteness and loyal spirit. A boy came before him at his clinical lecture, complaining that his right arm was paralytic. Desault suspected the truth of his story, and said, "Otez votre chapeau:" the boy, forgetting his paralytic story, immediately raised his arm and took off his hat. "Donnez moi un baton," said Desault; and he beat the boy unmercifully, and said, "D'où venez vous?" the boy replied, "du Fauxbourg de St. Antoine." "Oui, je le crois," said Desault, "tous les coquins viennent de ce quartièr-la." It is hardly necessary to say, that the mobs of Paris sprung from the Fauxbourg St. Antoine. Sir A. C. states, that Desault gave lectures in anatomy, and admirable clinical lectures; he was very attentive to his duties in the hospital, and had a very large share of private practice. Chopart he considered to have been a very inferior man to Desault, and little acquainted with the first principles of his profession.

On the 10th of August, 1792, Sir Astley Cooper was attending an operation at Chopart's Hospital, when the fire of cannon announced the attack upon the château of the Tuilleries, and he immediately ran upon the Pont Neuf, whence he could see the Swiss guards firing from the windows on the people below. As his lodging was near the Place Victoire, he had to go through the streets near the Palais Royal, when the scene became of the most extraordinary description. The cannon was still roaring—muskets firing—the tocsin sounding—litters with the dead and dying carried through the streets—the women crying for the loss of their relatives, and from apprehensions—and bodies of men armed with pikes were carrying either the heads or some parts of the bodies of the Swiss they had killed, as

trophies of their victory. On the following day he saw the king and queen go to the Temple, which they only quitted for their execution. Sir A. C. several times heard Brissot, Vergniaud, Gaudet, Marat, and Robespierre address the Legislative Assembly, and was once at the Jacobin Club. He saw two persons, a marquis and a priest, guillotined for forging assignats. In later days, instead of wasting his time in the summer months upon our coast, he has frequently visited the continent, and he became intimately acquainted with Dupuytren, who had the kindness to give him admission to the dead-house of the Hôtel Dieu, that he might pursue the objects which he had in view by the inspection of any cadâvres he chose. Sir A. C. considered Dupuytren as an excellect practical surgeon, as a sensible man, as an admirable clinical lecturer, and as the best of fathers, for he idolized his daughter, and she was most affectionately attached to him. Dupuytren introduced Sir A. C. to Louis Philippe, then Duke of Orleans, who afterwards gave him the Cross of the Legion of Honour, and soon afterwards he was made an honorary member of the National Institute.

In the year 1792 he commenced practice, and took up his residence in Jeffrey's-square, St. Mary Axe, where he dwelt for six years; after which, he removed to New Broad-street, Bishopsgate, and remained there until 1815, when he came to the West end of the town. The popularity he enjoyed as a surgeon, and the extent of his practice, has been greater than that of any of his predecessors, or those who have succeeded him. He has most honourably and justly realised a large fortune by distinguished merit and most laborious application. During a long practice, he never omitted to deliver his regular lectures, and the detail of his daily labours is a matter almost past belief. Sir Astley was always, and still is, an early riser, and the first hours of the day were devoted to the making of dissections, arranging of preparations; and patients in his neighbourhood were frequently visited before the hour of breakfast, which usually occupied but a few minutes. Patients applying at his residence for advice, were then seen until one o'clock; after which, the hospital was visited, a lecture on anatomy and physiology delivered, operations performed, &c.; the patients visited at their own homes until seven o'clock, at which hour, or frequently later, a frugal dinner was taken, with a very limited quantity of wine, for Sir Astley has been remarkable for his temperance. After dinner, a repose for a quarter or half an hour; and then again, twice a week to lecture on surgery, and to visit patients until midnight. I witnessed this course for a very long period, and it is incredible how such great exertions could be sustained for such a period of time. As a lecturer, Sir Astley was remarkable for his spirit and animation. However serious his humour might

chance to be, from the pressure of professional avocations, and the deep and awful responsibility with which he was affected on every side, the assumption of his place in the lecture theatre seemed to throw new life into him, to impart a vigour to his frame, and to give full scope to his professional enthusiasm. No lecturer ever commanded greater attention from his pupils, and no one, most certainly, was ever more deserving of such attention.

In the course of his practice, Sir Astley has met with many remarkable circumstances, and he now equally delights and amuses his friendly circle with the narrative of them. He received, perhaps, the largest fee ever at that time given for an operation; it was upon an old gentleman of the name of Hyatt, who was a resident in the West Indies, and when arrived at the age of seventy, being afflicted with stone in the bladder, determined upon coming over to England to undergo the operation for its removal. He selected Sir Astley for the occasion. It was performed with his accustomed ability; and upon visiting him one day, when able to quit his bed, he observed to his surgeon, that he had *fee'd* his physicians, but that he had not yet remunerated his surgeon. He desired to know the amount of his debt; and Sir Astley stated, "two hundred guineas." "Pooh, pooh!" exclaimed the old gentleman, "I shan't give you two hundred guineas—there—that is what I shall give you," tossing off his night-cap, and throwing it to Sir Astley. "Thank you, sir," said Sir A. "any thing from you is acceptable," and he put the cap into his pocket. Upon examination, it was found to contain a cheque for one thousand guineas. One other anecdote must be related, as it is singularly illustrative of character. Mr. Steer consulted Sir A. at his own residence, and, having received his advice, departed without giving the usual fee. Sir Astley took no notice of this, but gave his assistance to him cheerfully, under a belief that he was a gentleman who had seen better days, and was now in indifferent circumstances. Shortly after, however, Sir Astley received a note, acquainting him, that on going to the Stock Exchange, he found he had some omnium which he had not disposed of, and that he had taken the liberty of putting £3,000 of it in his name; and finding that it had soon after risen, he took the further liberty of selling it for him, and now sent him the difference, which was, £63. 10s.—Sir Astley's annual receipt of fees far exceeds that of any other member of the profession. In one year he received no less a sum than £21,000, and for many years from £15,000 and upwards. His patients have comprised all classes of society, and his attention was equally bestowed on the wealthy and the indigent.

He was appointed surgeon to George IV., and in the year 1827 made serjeant-surgeon. He attended William IV. when he was First Lord of the Admiralty; and the Earl of Munster, when he had a severe compound fracture of his leg; and at the request of the Duke of Wellington, was made Grand Cross of the Guelphic Order.

In 1821 Sir Astley was created a Baronet, with remainder, in default of male issue, to Astley Paston, the fourth son of his second brother, the Rev. Samuel Lovick Cooper, rector of Ingoldsthorpe and Barton, Norfolk. By his marriage with Miss Cock, Sir Astley had only one daughter, who died at the early age of two years. Lady Cooper died in June 1827; and in July 1828, Sir Astley again entered the married state with Catherine, daughter of John Jones, Esq. of Derry Ormond, Cardiganshire.

Sir Astley Cooper, when most engaged in lectures and the practice of his profession, always made it a rule to enter in his case-book all the interesting operations and cases which he witnessed, and these books he has regularly preserved from 1800, and occasionally some prior to that period, as far back as 1784.

He commenced as a lecturer at St. Thomas's Hospital in 1791, and continued to lecture until 1826. He also delivered a course of lectures on comparative anatomy, at the Royal College of Surgeons, of which he is a member of the council, and of the board of examiners, and was elected President for the years 1826 and 1837. In addition to many honours already mentioned, numerous foreign academies, and almost all the scientific institutions of this country, have been eager to enroll his name among their members; the Royal Institute of Paris, of the Netherlands, &c. The University of Oxford has conferred upon him the degree of Doctor of Civil Law.

The works of Sir Astley Cooper, to which attention must now be directed, are written without pretension to elegance; they are directed only to the statement of facts, and are indeed not brought forward with any view to the support of a preconceived theory; they are the unbiassed relation and results of a very long and extended experience, and they abound with sound practical observations. It is much to the credit of Sir Astley Cooper, that his works, although costly, have been published at a low price. The expense of engravings, particularly when coloured, must always be great; and it is due to Sir Astley to say, that his object in publishing has not been pecuniary advantage. He has been actuated by a higher motive, and this may be given in his own words.

" After having been for forty years placed in a situation of ample opportunity—after having been fostered by the profession and the public, infinitely beyond my deserts—I feel that I only perform my duty in giving to my medical brethren, without any sordid views, the result of my experience."

1. In a volume of " Medical Researches, selected from the papers of a Private Medical Association," published in 1798, Sir A. Cooper has two contributions. The first is a case of strangulated hernia, in which a part of the abdominal viscera was protruded into the left cavity of the chest, and death thereby produced. Such a condition of parts could only be ascertained by inspection after death; and the record of it, as an unusual occurrence, resulting from original malformation, is not without its value. The subject of it was brought into the anatomical theatre of St. Thomas's Hospital for dissection; and the particular history is therefore not well known. The viscera were very much displaced from their natural situation, and the great arch of the colon, and a large portion of the omentum, were pushed through an aperture in the diaphragm into the cavity of the chest. Had the existence of such a state been known during life, no possible means of relief could have been afforded.

2. The second contribution to the " Medical Researches," is more singular than the preceding one. It details *three* instances of " Obstruction of the Thoracic Duct;" that channel by which our nutriment must take its course into the circulating system. The protecting power of nature, the care taken to continue the existence of the individual, is most strongly marked in these cases. In the *first*, a scrofulous disease of the valves near to the receptaculum chyli, was found to be present, and prevented the free injection of quicksilver into the vessel. By what means the body was nourished in this case, could not be ascertained, the dissection of the body having proceeded too far to admit of this inquiry, previous to the morbid condition being observed. In the *second* case, however, the contrivance of nature became apparent. The thoracic duct was being injected, and a portion of the wax by force escaped from a divided absorbent, belonging to a cluster of vessels under the left crus of the diaphragm. Quicksilver being poured into this absorbent, it entered into a large vessel, which passed half way up the chest on the left side of the aorta, crossed the spine behind that vessel, and then terminated in the thoracic duct, which became readily filled with the injection from the part diseased, to that at which it opens into the vein. It was ascertained that the obstruction arose from a small fungous substance, of a scrofulous nature, and that one half only of the duct was capable of performing its function. The continuance of life was secured by anastomosing absorbents, which performed the office of the duct,

and conveyed the chyle and lymph into the blood. The *third* case was of a man admitted into St. Thomas's Hospital, for a furgoid testis. Upon examination, he was found to have a tumour on the lumbar vertebræ, formed by the enlarged absorbent glands, of the enormous weight of 9½lbs. The thoracic duct was thickened and opake, resembling rather a nerve than an absorbent vessel; the commencement of it, the receptaculum chyli, was filled with a pulpy matter, and this extended into the duct, which was lost in a swelling of the size of a walnut, opposite to the curvature of the aorta.* Above this enlargement the duct appeared as usual, and terminated in the veins. Sir Astley then believed this disease to be truly cancerous in its nature. In this case the duct was obliterated two-thirds of its course; this was ascertained by injection, and the matter injected was found to pass from the receptaculum chyli, through several vessels behind the aorta into a large trunk, which passed the whole length of the chest on the left side of the spine.

"Through this vessel the injection flowed to the first dorsal vertebra, and then entered the thoracic duct, which being above the part at which the vessel was diseased, there was no further interruption to its passage into the jugular vein. From the side of this trunk several small vessels arose, and having passed behind the aorta, entered the undiseased part of the duct near to the tumour. In this case, then, as well as the former, the obstruction was prevented from producing fatal consequences, by the anastomosing vessels on the left side of the spine, having performed the office of the thoracic duct."

These collateral vessels may be found in subjects where the duct is healthy, as Sir Astley has shown by some injections, and he has thus verified a remark of Mr. Cline's, as to the probability of these vessels forming the new absorbent channels, in cases of obstructed thoracic duct. It will be evident from this, that the absorbent, like to the arterial system, has the power of accommodating itself to circumstances, and creating a condition of parts capable of carrying on the necessary functions under apparently the most unfavourable circumstances. These cases stimulated Sir Astley to make some experiments, and he is the first, I believe, who succeeded in tying the thoracic duct. Dr. Monro had attempted it, and failed, and I am not aware of its having been successfully performed by any one prior to Sir A. Cooper. These experiments are detailed in the paper just mentioned, and they prove that when the extremity of the thoracic duct is suddenly obstructed, the duct and receptaculum chyli burst and extravasate the chyle and lymph; absorption is, therefore, no longer continued, and the consequences are fatal to the animal. They prove also the contractile

* This preparation is in the Museum of St. Thomas's Hospital.

powers of the absorbents, even to a degree capable of rupturing their coats; and, they also prove, that the absorbent vessels do not frequently terminate in veins, as formerly was supposed by many anatomists, though an instance of this kind has been narrated to me by Sir Astley, and it occurred in one of the groins of the body of a Lascar. This is, however, to be looked upon as an exception to the general rule.

3. In the Philosophical Transactions for the year 1800, (part i. p. 151,) Sir Astley Cooper has a paper entitled, "Observations on the Effects which take place from the destruction of the Membrana Tympani of the Ear." Many experiments had been made by anatomists, with the view of ascertaining the effects produced by a perforation of the membrana tympani; but as these had been made upon quadrupeds, little information was thereby obtained. Mr. Cheselden had contemplated performing the experiment upon the human subject, and a condemned criminal was selected for the operation; but an outcry was raised, and the intention was abandoned. Disease, however, of this part, points out the effects produced by an opening in the membrane. It is distinctly ascertained, that the membranes of both ears may have large apertures in them, and the powers of hearing be very little impaired.

4. In the Philosophical Transactions for 1801, (p. 435,) Sir Astley submitted some farther Observations on the subject, and gave an "Account of an Operation for the Removal of a particular species of Deafness." The operation proposed is that of puncturing the membrane in cases where deafness is found to proceed from an obstruction of the Eustachian tube, or, in other words, the passage from the throat to the internal ear. Several cases in which this operation had been performed, are detailed; but it is due to Sir Astley to say, that he has had the candour to admit the disappointment he has experienced upon this subject. Deafness from a closed Eustachian tube is rare: the relief obtained has been generally only temporary, the opening made into the tympanum often closes, and deafness returns: a constitutional as well as a local treatment is therefore required. The president and council of the Royal Society awarded to Sir Astley the Copley medal for these papers.

5. The principal work by which Sir Astley Cooper became known to the profession as an author, and by which his fame has been established, is that upon Hernia, or Rupture. No disease demands a more accurate knowledge of anatomy, or requires more minute dissection, for the understanding of its pathology. The changes which take place in the relative situation of parts, the alterations the structures undergo, and their vital importance, renders this disease a matter of most serious moment to the surgeon. The

anatomy of the parts concerned in cases of hernia had been, with the exception of the masterly production of Gimbernat, a Spanish surgeon, almost neglected; and it is due to Sir Astley Cooper, to assign to him the merit of drawing the attention of the English surgeon more particularly to the important subject of hernia. Albinus had previously demonstrated the oblique passage of the spermatic cord through the abdominal parietes, but he had no idea of the upper ring, or of the inguinal canal, for a knowledge of which we are decidedly indebted to Sir Astley. Mr. Lawrence, whose authority upon this subject will be considered as most satisfactory, states, that "no complete description and accurate delineation of even the common kinds of hernia, as the inguinal, femoral, and umbilical, existed previously to the late excellent works of Camper, (published by S. T. Söemmering after the author's death,) Cooper, Scarpa, Hesselbach, Cloquet, and Langenbeck."

The first part of Sir Astley's work is confined to the "Anatomy and Surgical Treatment of Inguinal and Congenital Hernia," published in 1804; the second, published in 1807, to that of "Crural and Umbilical Hernia," &c. A second edition was published in 1827, with notes by Mr. Key. The varieties of hernia, and the modes necessary for the reduction of the several kinds, are only to be ascertained by a thorough knowledge of the anatomy of the parts concerned. Upon this point, the information contained in Sir Astley's book is precise and complete. He has well described the manner in which the hernial sac is formed, the mode in which it descends, and the several fasciæ constituting its coverings. The varieties to which it is occasionally subjected are not neglected by our author, and the causes likely to produce the displacement are ably enumerated. The remedial measures are fully detailed, and the mode of application of trusses dwelt upon with considerable ingenuity and precision. Too much carelessness upon this head prevails, even at the present day, notwithstanding the observations of Sir Astley Cooper, Mr. Lawrence, and others, who may justly be considered as our best authorities upon the subject. The practice of one of the largest hospitals in this metropolis, for a great number of years, (for Sir Astley was surgeon of Guy's from 1800 to 1826, and, since that period, consulting surgeon,) has given to Sir Astley extensive experience in the treatment of strangulated hernia. No surgeon, of modern times, has perhaps operated so frequently or so successfully, and this has arisen, in part, from a due regard to the instructions of his celebrated master, to whom the work is very appropriately dedicated, (the late Mr. Cline,) as to the danger of delay in operating upon cases of this description. *Mora non tuta—mora damnosa.* To estimate the value of Sir Astley's work, it must

be carefully read; it is impossible to condense the subject in a manner adapted to these pages; but it may be safely said, that there is no one point in relation to hernia or its treatment, under all its varieties and conditions, which is not satisfactorily treated of in this publication. The description of fasciæ may, perhaps, by some be considered as too minute; dissections of this nature are extremely difficult, and often unsatisfactory, for it is not easy to trace fasciæ; and one evil resulting from this difficulty is, that the subject thereby appears really to be more complicated and obscure than in reality, upon operation on the living subject, it is found to be. I must, however, guard against any misconstruction upon this head, for I would not be understood to undervalue the researches of Sir Astley, or the perspicuous manner in which he has described the transverse fascia. The *transverse* fascia is of vital importance in obtaining a correct knowledge of inguinal hernia, and the mode in which the upper abdominal ring is formed; and it was never known until Sir Astley pointed it out, and demonstrated its relations. The discovery of this fascia may justly be considered as the most important addition made by Sir Astley to anatomical science. It is admitted to be so by all the best writers on the anatomy and surgery of hernia—Langenbach, Cloquet, Lawrence, S. Cooper, B. Cooper, Colles, Quain, &c. The *upper ring*, and the *inguinal canal*, (before unknown,) are formed by this structure, a precise acquaintance with which, is of the greatest consequence in the treatment of inguinal hernia, and without which it is impossible satisfactorily to understand it. Mr. Lawrence, admitting the discovery of the fascia transversalis to be entirely and exclusively due to the accurate anatomical investigations and patient research of Sir A. Cooper, suggests that it ought to be designated by the name of the discoverer. The manner also in which the femoral hernia is enclosed in a double sac, was *first* described by Sir A., and upon this is founded the knowledge we entertain of the proper method of applying the taxis, and reducing this common form of hernia in females. All the difficulty which has occurred in the operation for femoral hernia, has arisen from its not being understood that it was contained in two bags; the first formed of what Sir A. calls the fascia propria, or crural sheath, elongated so as to form a sac; and, secondly, the peritoneal bag, which is included in the former covering. When the fascia propria is opened, the intestine is supposed to be laid bare; but it is only the fat, and peritoneal bag, which are exposed, and which sac afterwards requires to be opened with the greatest care, as there is little fluid in it in the femoral hernia.

Sir Astley may also lay claim to the discovery of the mode of formation of the crural sheath, which receives the femoral artery, vein and absorbent

vessels, with two septa separating the artery from the vein, and the vein from the absorbents. The forepart of this sheath, formed by the fascia transversalis, and its posterior part by the fascia iliaca. Gimbernat's ligament is placed between the sheath and the pubes; the anterior crural nerve upon the outer part of the sheath, Poupart's ligament before it, the psoas and iliacus muscles behind it.

As the epigastric artery, in inguinal hernia is in one species on the inner, and in the other on the outer side of the mouth of the sac, Sir Astley Cooper advised cutting upwards in inguinal hernia; and as the epigastric artery is placed on the outer part of the femoral hernia, he recommended the scratching the edge of the stricture with the knife, in the direction towards the umbilicus, which will be sure to avoid that artery or any other, if the fibres of the stricture are only slightly touched with the knife, and then further divided by pressure with the finger or the director.

The superficial fascia, which is an expansion of condensed fibrous structure, was described by Camper, but much more fully by Sir A. Cooper. He gave to it its name, and it is known by that denomination ever since. Cloquet describes it accurately, so does Quain; it is most distinctly seen in thin subjects.

6. In the Edinburgh Medical Journal for April, 1805, Sir A. Cooper has detailed a case of malformation of the urinary and genital organs, of a poor female admitted into St. Thomas's Hospital. Dissection showed the anterior portion of the bladder to be wanting, also the symphisis pubis, and the abdominal muscles situated above this part. The ureters entered the posterior part of the bladder, and they were increased to an enormous size, and formed at their extremities a kind of reservoir for the urine.

7. Sir Astley Cooper was an active promoter of the Medico-Chirurgical Society, and has contributed largely to their valuable transactions. The first paper in the first volume, consists of the relation of "A Case of Aneurism of the Carotid Artery." This case was treated by ligature upon the vessel, the *first* of the kind on record, and establishing a practice which has since been pursued, and successfully adopted. The first case was, however, unfortunate in its issue, inflammation of the aneurismal sac and the parts adjacent, having taken place about a fortnight after the operation, and by which the size of the tumour became so much increased, that by pressure on the pharynx and larynx, deglutition was prevented, and violent cough occasioned, to such a degree, as ultimately to impede respiration. The operation was performed under very disadvantageous circumstances in this case, from the length of time the disease had been permitted to exist, and the magnitude the tumour had acquired.

8. In 1808, Sir Astley had another opportunity of tying the carotid artery; and the issue, by a complete success, well repaid the anxiety he had sustained. The case is related in the same volume as the preceding.

9. 10. In the second volume of the Transactions are also two papers, one a "Dissection of a Limb, on which the operation for popliteal aneurism had been performed;" the other, "Some Observations on Spina Bifida." The operation in the case of aneurism, had been performed by Sir Astley seven years previously to the death of the patient; and the limb which had been affected being injected, Sir Astley gives an account of the appearances of the blood-vessels consequent upon the operation. It points out the vessels which by anastomosis are chiefly employed in carrying on the circulation, when the main trunk has been obliterated, and is therefore both interesting and useful.

The observations on spina bifida are important in the practice of surgery. This disease, or rather malformation, consists of a deficiency of the spinous processes of the vertebræ by which the theca enclosing the spinal marrow distends and projects forth to form a tumour, any opening into which has been commonly considered as necessarily attended by fatal effects. Sir Astley Cooper is the first surgeon to whom we are indebted for the performance of an operation upon these cases, and in which success has followed his exertions. The treatment adopted has been either palliative or radical; the former consisting of pressure judiciously applied to the part, the latter an evacuation of the fluid contained in the sac, and subsequent pressure by which adhesion has been promoted. This is only applicable to cases where the deficiency of the spine is not considerable. The latter method is attended with great constitutional irritation, generally productive of convulsions. In several instances, Sir Astley has been completely successful in effecting a cure; but there are many cases in which all attempts at relief are useless—these are, when the case is connected with an unnatural enlargement of the head, and where hydrocephalus internus is conjoined with the malformation. If attempts be made in these instances, either by pressure or puncture, to palliate or radically to cure the disease, an accumulation of water will take place within the ventricles of the brain, and the event prove fatal. Where also the lower limbs are paralytic, or the bladder and rectum have lost their power of retention, or where the tumour has burst soon after birth—these are all cases in which the methods proposed by Sir Astley Cooper are inapplicable. It is due to the late Mr. Abernethy to state, that the mode of cure by occasional punctures discharging the fluid according to the frequency with which it accumulates, is founded upon the same principle as that recommended by this eminent man for the cure of

psoas abscess. Sir Astley has not been unmindful of this circumstance in the account he has given of his cases. Sir Astley attributes the successful issue of the cases under his care to the employment of needles, and not the lancet, to discharge the fluid. The use of the former is not followed by the same irritation as the latter, and this circumstance has led to their application in other dropsies. Sir Astley has been so good as to give me the opportunity of seeing two of his cases, in one of which a truss is worn, and in the other no bandage whatever. Both patients are now active, healthy men. In one, Benjamin Little, aged thirty, a radical cure has been effected; the man is able to follow all his duties as a lighterman, and can row from London to Gravesend and back without suffering more than any other man in the same occupation. The skin is much thickened, and there is a retraction in the centre like to an umbilicus, by which its adhesion is firm upon the basis of the sacrum. In the other case—Sterney, aged twenty-eight—a partial adhesion only has been produced. With a truss similar to that for an exomphalos, he is capable of enduring considerable fatigue. He was the son of a butcher, and in the habit of riding many miles daily, meeting with various accidents, but no serious effect has ensued. When the truss is removed, the swelling becomes about the size of a small orange, and the man immediately feels an alarm, his limbs tremble, and he becomes confused. This is instantly removed by the reapplication of the truss. In this case the swelling was of a very considerable size; it was punctured fifty-two times. They are cases of the most interesting description. In my own practice, I regret to say these cases have not been attended with such successful results. I have in several instances adopted the plan recommended: but in all my cases convulsions ensued, and proved fatal. This will, I believe, occur in a very large proportion of the cases of this serious malformation. Sir Astley found that the cases were unsuccessful, if the skin was ulcerated over the tumour; for this is always connected with disease of the brain, and the children die of convulsions. Dr. Marcet made several analyses of the fluid in the cases of spina bifida, and it was found to correspond with that which is met with in the ventricles in cases of hydrocephalus internus. They are detailed in the second volume of the Transactions.

11, 12. The fourth volume contains two other papers by Sir Astley Cooper: the "History of a case of Premature Puberty," and "An Account of the Anastomosis of the Arteries at the Groin." The first occurred to a girl of four years and a half only, and is an interesting addition to the already numerously recorded cases of the kind; the latter paper may be regarded as a sequel to the account of the arterial distribution after the

operation for popliteal aneurism, before noticed. The instances detailed in this paper were of individuals who had had the iliac artery tied, one of whom survived the operation a much longer time than the other; and the number of vessels for carrying on the circulation, it must be observed, was greater in the more recent of these cases. As time advances, the vessels gradually enlarge, and the circulation is capable of being maintained by fewer branches. Appended to this paper is an account of the tying of the iliac artery in two cases of aneurism, under very disadvantageous circumstances; but the cases proved successful.

13. In the eighth volume are, "Three Cases of Calculi removed from the Bladder without the use of cutting instruments." To Mr. Thomas we are indebted for first pointing out the readiness with which the female urethra will admit of dilatation; and, since the relation of his case in the first volume of the Transactions, numerous operations for lithotomy have been spared. The cases detailed by Sir Astley confirm this statement. Cutting for stone in the female, may henceforth be considered as an unnecessary operation.

14, 15. The eleventh volume contains an "Account of a case in which numerous (more than eighty) Calculi were extracted from the urinary bladder of the male without the employment of cutting instruments." Sir Astley has observed, (p. 357,) that when a great number of calculi are found in the bladder, the circumstance is generally attended with an enlargement of the prostate gland, and it depends upon a sacculus being formed in the bladder directly behind the enlarged gland. In these cases the bladder is rarely completely emptied of its contents, and the calculi crystallize from the urine retained in this sac. The number of calculi is sometimes very great—twenty or thirty, or more, are not unfrequently met with. Sir Astley mentions one case in which fifty-six were found, and another in which 142 were extracted. The instrument used by Sir Astley was a pair of forceps in the shape of a sound, the blades of which could be opened whilst in the bladder by means of a stilette. By these means, the operation for lithotomy has been avoided in the male. Sir Astley succeeded in extracting a stone weighing fifty-four grains, in the case of Sir William Bellingham, recorded in the twelfth volume of the Transactions.

16. In the twelfth volume is the relation of a case, the operation upon which I witnessed. It was of an enormous adipose tumour, situated upon the abdomen. The magnitude to which these preternatural growths will arrive, is almost inconceivable. In the present instance, the tumour, when removed, weighed 37lbs. 10oz., being rather more than one-fourth the weight of the entire man. It had been allowed to grow during forty years,

the man being fifty-seven at the time of the operation. At its commencement it did not exceed the size of a pea, but had in sixteen years acquired the magnitude of a child's head; no inconvenience, however, beyond that arising from its size and weight, being sustained. At the time of the operation for its removal, it measured one yard and a quarter around its greatest circumference, and eighteen inches around its neck, extending, when he was sitting down, to his knees. It was removed in the most masterly manner, and in eight days the man was well enough to rise from his bed, and walk in the ward of the hospital. He perfectly recovered.

17. In 1818-20, a volume of Surgical Essays by Sir A. Cooper and Mr. Travers, made its appearance. Its object was to give to the profession and the public, the results of extensive practice, obtained in the hospitals of St. Thomas and Guy's. The intention of the work is well expressed in the preface.

"The variety which of necessity occurs in the practice of the surgeons—the facility afforded to them in their respective plans of treatment—the opportunities of improving the practice of medical surgery—of observing the results, general and comparative, of operations of every description—and especially of prosecuting inquiries into morbid anatomy, by prompt examination of the dead body, and of parts removed by operation—are advantages which, while they afford ample compensation for the labours of clinical research, would allow no pretext for indifference in those who, conscious of their value, were not influenced by an ardent desire to improve and impart them.

The volume is in two parts, and the communications of Sir A. Cooper consist of—1. On Dislocations. 2. Case of Ligature on the Aorta. 3. On Exostosis. And in the second part:—1. On Dislocations and on Fractures of the Hip and Knee-joint. 2. On Unnatural Apertures in the Urethra. 3. On Encysted Tumours.

On the subject of Dislocations, Sir Astley dwells with great propriety upon the necessity of a knowledge of anatomy, without which, it must be evident, the displacement of a bone cannot be understood, nor the proper means devised for its reduction. This, among other points, renders the study of the structure of the joints of very great importance. The symptoms attendant upon the different kinds of dislocation, the circumstances by which they are to be detected, the consequences of neglect in the reduction and the after-treatment, are all fully stated by our author. Dislocations are known to occur in some instances from mere relaxation. Sir Astley gives a notice of a curious case of this kind. It happened to a dancing-girl from the south of Europe, who, by great exertions from her earliest years, had produced such a relaxed condition of the ligaments of the knee-joints, that she had the power at pleasure of throwing the patellæ

off the surfaces of the condyles of the thigh-bones. Disease, producing relaxation of the ligaments, is known also to give rise to dislocation. A paralytic state of the muscles of a joint will also occasion dislocation to be matter of easy occurrence. The chief cause of difficulty in the reduction of dislocations, is to be found in the muscles; the resistance afforded by them, is proportionate to the length of time the dislocation has existed. A slight force, applied in the earliest period after the accident, is sufficient to reduce a dislocation. A long continued but gradual extension is necessary in cases that have been allowed to remain unattended to for any length of time. Violence in the reduction of luxations, cannot be too much condemned; sound parts are injured by such injudicious measures, and increased resistance is called forth by such efforts. Relaxation must necessarily follow continued extension, and power over the action of the muscles will thus be obtained. The influence of the mind is another point of great consequence in aiding the reduction of dislocations. The muscles offering resistance to the reduction, may be overcome by directing the mind of the patient to other muscles; the action of the former being suspended, the object of the surgeon will often be instantaneously effected. Cases of the different dislocations, and the diagnostic symptoms by which the injuries are to be ascertained, are given in Sir Astley's paper; and plates are subjoined to represent the various appearances, which will serve materially to assist the young surgeon in forming his judgment upon one of the most difficult, as well as most important objects of his practice.

The case of Ligature on the Aorta presents the boldest operation of modern surgery. The case was unsuccessful, but the life of the man upon whom it was performed was prolonged. It is an useful case in many points of view, and demonstrates the power of nature in the preservation of life in a most remarkable manner. A few years since, no one would have believed it possible to pass a ligature round the largest blood-vessel in the body, the main trunk by which the greater part of the frame derived its nutrient fluid, without occasioning death. The reverse of this has been shown by Sir Astley Cooper, under circumstances of peculiar interest:— Charles Hutson, a porter, thirty-eight years of age, was admitted into Guy's Hospital, April 9th, 1817, for a swelling in the left groin, which was pronounced to be an aneurism, though the pulsation in it was obscure. It had arisen from a blow he had received twelve months before, by falling against the corner of a chest. Soon after his admission, the swelling increased to double its size; it was much diffused, and large veins crossed its surface. The swelling had acquired such a magnitude, that, at this time, he thought it was not possible to have reached the common iliac artery without making

an opening into the cavity of the peritoneum. Measures were, therefore, taken to endeavour to obliterate the artery, and diminish the size of the tumour, but without success. Sloughing and ulceration occurred, hæmorrhage succeeded, and his death seemed inevitable. Sir Astley endeavoured to reach the artery by an incision into the aneurismal sac; but he found only a chaos of broken coagula, and that the artery entered the sac above and quitted it below, without there being any intervening portion of vessel; and all attempts in this way to relieve the patient, were entirely out of the question. Under these circumstances, Sir Astley resolved upon the bold experiment of tying the aorta! To effect this, he made an incision three inches long into the linea alba, pierced the peritoneum, and passed his finger into the cavity of the abdomen, between the intestines to the spine, and there felt the aorta greatly enlarged, beating with excessive force. Scratching through the peritoneum by means of his finger-nail, he passed around and again through the peritoneum, so that his finger was placed under the vessel; then, by the aid of an aneurismal needle, he conveyed a single ligature to it, and, taking great care not to include any portion of intestine, he tied the thread. The condition of the patient immediately before and during the operation, was awful; the administration of opium and camphor was rendered necessary. The sensibility of the limb was imperfect; and upon Sir Astley placing his hand on the thigh, the man said he had touched his foot. He never regained the perfect sensibility of the limb; his extremities recovered their temperature; but the aneurismal limb was 87½ degrees, whilst the other was 94 degrees. Sickness ensued on the following day, the pulse became weak and fluttering, he complained of pain over the whole body, but particularly of the head; the carotid arteries beat with great force, and he sunk, having survived the operation forty hours. Examination of the body presented no appearance of peritoneal inflammation. The aorta was found to have been tied about three-quarters of an inch above its bifurcation, and upon opening it, a clot of more than an inch in extent was seen to have sealed the vessel above the ligature; and below the bifurcation another of equal extent, occupying the right iliac artery; and the left had a third clot, which extended as far as the aneurism. The power of nature, therefore, in effecting this obliteration in the largest trunk in the body, was fully established, and this too in the short period of forty hours.*

Sir Astley had, previously to this operation, and since that time has, tied the aorta of different animals, more especially the dog, and these have recovered, as the preparations of anastomosis of this vessel shows in the

* The preparation is in the museum of St. Thomas's Hospital.

collections of St. Thomas and Guy's hospitals. Sir A. proposes, in the event of a necessity again arising for tying the aorta, to operate in a different manner. He would make an incision through the muscles on the inner side of the anterior superior spinous process of the ilium, and a little above it, and then turning the peritoneum towards the opposite side of the body, detach with the finger its cellular connexion, and by this means reach the artery without opening the peritoneal cavity.

On the subject of exostosis, or a preternatural growth of bony matter, it has been shown to have two different seats; one in the periosteal, the other in the medullary texture. The nature of these tumours varies, being, according to Sir A., either cartilaginous or fungous. Every bone of the body is liable to this disease; but the thigh-bone is most frequently affected by it. The cartilaginous exostoses probably originate in a blow, or other injury inflicted on the part; the medullary appear to be connected with constitutional disorder, and frequently prove fatal in their consequences. Cutting off the supply of blood, by tying the arteries leading to these fungous excrescences, has not been attended with any beneficial effect, and much credit is due to the reports of cases by himself and Mr. Lucas, in which their attempts have been unavailing in this respect, as the publication of these will prevent others from adopting an unnecessary procedure; but the cartilaginous may be safely sawn off.

The paper on fractures of the neck of the thigh-bone, contrasts that accident with dislocation, and states the difference of opinion which exists as to the process employed by nature in the restoration of parts under such circumstances. The opinion expressed as to the general non-union of transverse fractures of the neck of the thigh-bone within the capsular ligament, has led to considerable discussion, which, however, has terminated by the exhibition of some preparations, manifestly showing the union of the bone by the deposition of true ossific matter. The discussion has been of much service; for young persons at least, affected by so severe an accident, will not be abandoned to their fate, but remedial measures will be attempted, to endeavour to procure ossific union. In a great majority of cases, however, these efforts will be unavailing, and the union will be only ligamentous. The accident rarely occurs but at an advanced period of life, when the power of reparation is feeble; and from the disposition of the arteries within the capsular ligament, as pointed out by Sir Astley, the union by bony matter is not likely to ensue. Sir Astley's opinion on this subject, is well expressed in the following passage.

"In all the examinations which I have made of transverse fractures of the cervix femoris, entirely within the capsular ligament, I have never met with a bony union,

or of any which did not admit of motion of one bone upon the other. *To deny its possibility,* would be presumptuous, under all the varieties of direction, extent of fracture, and degree of violence, by which it has been produced, as, for example, when the fracture is through the head of the bone, and there is no separation of the fractured parts, for there is scarcely a general rule which does not admit of exception; but, all I wish to be understood to say is, that if it ever does happen, it is an extremely rare occurrence, and that I have not yet met with a single example of it."

The causes of this want of union he states to be, want of proper apposition, absence of continued pressure, and little action in the head of the bone. He gives an account of the dissection of some of these cases, and he illustrates his views by a detail of various experiments made upon animals, to demonstrate the mode of union, or the non-production of it under particular circumstances. Sir Astley Cooper has since seen one united, where the reflected ligament at the neck of the bone had not been torn through, and consequently where the usual shortening had not occurred. Sir A. C. has been much misunderstood upon this subject, and he has had occasion to correct a statement professed to have been made by Baron Dupuytren, in one of his *Leçons Orales*, attributing to him the opinion that ossific union never could take place in fractures of the neck of the femur. (See Med. Gaz. v. 14, p, 144.) The fact is, he never denied the union of those fractures in any publication, but imputes the want of it principally to the reflection of the synovial membrane on the neck of the bone, instead of a periosteum. In fractures of the shafts of bones, an ossific secretion proceeds both from the bone and the periosteum; but the neck of the thigh-bone is covered by a synovial membrane, instead of a periosteum. So the patella has no periosteum, but tendinous fibres only inserted into it. The same with the olecranon, &c. The remaining part of this paper is on dislocations and fractures of the knee, of the ankle, &c. in which the results of Sir A.'s extensive practice are candidly and perspicuously stated.

The essay on unnatural apertures of the urethra gives some good practical directions for the treatment of those cases in their varied forms, and details an interesting case of abscess in the urethra, occasioning considerable loss of substance, which was supplied by a covering of integument taken from the scrotum, and applied upon Tagliacozzian principles.

The essay on encysted tumours is a short paper, not enumerating the different kinds, but confined to those which are situated just under the skin, and principally met with upon the head, face, and back. Sir Astley's attention was particularly directed to those, by having himself been the subject of one upon the back. He states that their origin is derived from follicles obstructed and enlarged, and therefore incapable of discharging their contents upon the surface of the skin. The curdy substance, often

with some hairs, and, in sheep, wool, found in these cysts, can be readily squeezed out; but as the cyst then remains, another accumulation speedily occurs, and the latter mode of treatment is to remove them entirely. The most expeditious way of doing this I have often witnessed, when a pupil, performed by Sir A. Cooper, and since repeatedly done by myself, is to make an incision through the integuments, carefully avoiding to wound the sac, and then applying pressure on each side, evert the entire tumour. This mode is quite effectual, and saves a great deal of pain, which a more free use of the knife necessarily occasions in attempting to dissect them out whole. Erysipetalous inflammation is less likely to occur after the operation, by the adoption of the milder method. These tumours sometimes form in great number: Sir Astley has seen one case in which there were no less than sixteen on the head. I have never met with more than ten. The largest Sir Astley ever saw, I witnessed the removal of. It was seated upon the crown of the head, and gave to the man a very grotesque appearance, it being as large as a common-sized cocoa-nut, so that when the man placed his hat on, it scarcely reached his head. The subject of horny excrescences shooting up from these cysts, will be noticed in another memoir.

18. Sir Astley Cooper's essays on dislocations and fractures, have been already noticed. In 1822, the subject was again treated of, and published in the form of a distinct treatise, in quarto, and accompanied by numerous plates; and, in the following year, an appendix, relating particularly to the fractured neck of the thigh-bone, in reply to some observations printed by the late Mr. Henry Earle, in his "Practical Observations on Surgery." This work must be regarded as the most complete of the kind hitherto published; and cases derived from the practice of Sir Astley and others are faithfully detailed. The principle upon which these injuries are to be treated are laid down, and the work must be regarded as an useful contribution to this department of surgery. In the treatment of compound dislocations, he has advised a plan which has saved the limbs and the lives of a great number of persons. He applies lint dipped in blood to the wound after the reduction of the bone, and approximating the edges, he heals the wound by adhesion; and he recommends it in wounds and in compound fractures.—The work has gone through many editions.

19. The diseases of the breast are among those maladies the most difficult to define, and often occasion the greatest anxiety to the patients afflicted. In 1829, Sir A. Cooper published a quarto volume of "Illustrations of the Diseases of the Breast." It is intended to be comprised in

two parts, the first of which (embracing those which are not to be considered as malignant,) only has yet appeared. Sir Astley has pointed out the great advantages to be derived from the examination of morbid structures, in forming a diagnosis of the disease, and adopting a proper mode of treatment. The breast is liable to almost all the complaints of other structures; but some are peculiar to this organ. The word "cancer" carries terror into the mind of every one: hence promises of cure have been always held out by the designing quack, and too often have the expectations of the ignorant and the timid been fatally disappointed: disease has been allowed to proceed until past all remedy, even by the knife; the results, therefore, of the experience of such a man as Sir A. Cooper, upon this point, are invaluable. Sir Astley has endeavoured to distinguish between those tumours which are the effect of acute inflammation, and those of a chronic kind; he has shown that some of the latter may be accompanied with specific action, and others not merely specific, but also malignant. How truly important are these investigations! satisfactory information upon which, can only be the result of extensive practice and attentive observation.

Of the first class of the acute kind is the milk abscess; of the chronic, the indolent swelling and abscess, and the lacteal tumour from obstruction of one of the lactiferous tubes. The second class is numerous: there are the hydatid, the chronic mammary tumour, the ossific, the adipose, the large and pendulous breast, the scrofulous, the irritable, and the ecchymosis of the breast. The malignant, Sir Astley arranges in two kinds; the scirrhous or cancerous, and the fungoid tubercle. The non-malignant diseases of the breast are fully described, cases given in illustration of them, and plates to demonstrate the constitution of their structure. In a few pages will be found a great variety of clinical facts and practical precepts. The distinction of the various species belonging to the several kinds of tumours is very ably drawn, and the profession must look forward with great anxiety to the completion of this important surgical work.

20. In 1830 Sir Astley Cooper published "Observations on the Structure and Diseases of the Testis," accompanied by ten plates, demonstrating the anatomy of the organ, and fourteen illustrations of the diseases to which it is liable. The anatomy of the testis is more distinctly shown by Sir A. than by any preceding anatomist, principally from the new and successful manner in which he has been in the habit of injecting the tubuli seminiferi with glue, or other coarse injection through the canals of the rete. This not only produces beautiful preparations, but also enables

the organ to be more easily dissected, and less liable to injury than those made by quicksilver. Sir Astley possesses the most beautiful injections of the testis that were ever made.

The most novel and important points in the anatomy of this organ, and parts appertaining to it, are the existence of a membrane, which lines the tunica albuginea, and is reflected over each tubulus as the pia mater is upon the brain; and the dissection of the inguinal canal, which has already been noticed. Sir Astley has seen the testis to descend from thirteen to seventeen years of age, during the progress of puberty, and in some cases it has not been accomplished until twenty-one.

The diseases of the testis he divides into those which result from common inflammation, either acute or chronic, specific but non-malignant, and those which are specific and malignant. To discriminate between these is a matter of the highest importance, and is a knowledge only to be acquired by extensive observation. Sir Astley has minutely traced the various organic changes to which the testis is subject, and the examples illustrative of the pathology of the organ are to be seen and referred to in his private collection, and also in the museums of St. Thomas's and Guy's Hospital. By these inquiries, many an useless, or rather unnecessary, operation will be prevented. The chronic inflammation of the organ was formerly looked upon as a sarcocele, and extirpation was resorted to. The use of mercury in the majority of cases supplies the place of the knife, and removes all dread and apprehension from the mind of the sufferer. Many surgeons have given their aid to produce this alleviation of human misery; but Sir Astley must be regarded as the foremost in the rank of this distinguished corps. The diseases in Sir Astley's *first* division never require extirpation of the organ—those in the *second* (the non-malignant, but specific) but rarely (hydatids forms an exception); the specific and malignant leave no other resource. The practice, therefore, to be adopted is rendered simple; but it is founded upon the previous knowledge obtained of the diagnosis of the several diseases. Scrofula is a disease generally supposed not to affect the secretory glands—the testis offers an exception to this. Sir Astley details some cases, and gives also an account of the dissection of the morbid organ. The testis is rarely affected by syphilis—many surgeons doubt its existence entirely; Sir Astley feels confident that it does occur, and that this specific inflammation will only yield to a mercurial treatment.

Of the laws which influence and regulate morbid growths, we have little precise knowledge—all accurate histories, therefore, of fungous tumours are of importance. The different stages of fungoid diseases of the testis are well depicted by Sir Astley Cooper. He thinks it both local and consti-

tutional. He has seen it in infancy, and he suspects it may partake of the scrofulous character. The constitutional nature of the disease is shown by its presence in different parts of the body. Too early extirpation of the disease cannot be performed; if it be allowed to continue any length of time, the effects will be most disastrous. Scirrhous testis is of rare occurrence; extirpation offers the only probable remedy.

The remainder of the work is upon diseases of the spermatic cord and the scrotum. Hydrocele in all its varieties is treated of, and a curious and interesting case of fungoid inflammation of the tunica vaginalis, treated by Sir Astley Cooper and Sir Benjamin Brodie. The chapters on hæmatocele, varicocele, and chimney-sweeper's cancer, will be studied by the surgical practitioner with great advantage.

21. Sir Astley Cooper published "The Anatomy of the Thymus Gland," in 1832. This work has resulted from frequent dissections of the fœtus, in the various stages of its growth, from the sixth week in utero-gestation, to the period of nine months, with the view of observing the descent of the testis. Sir Astley could not fail to remark in these instances, the changes in the size of the thymus gland, and the quantity of fluid discharged from it, when an incision is made into its substance. He has examined the structure of this gland, and the secretion produced by it. He has injected the vessels by which the produce is carried away, and finally inquired into the nature of the fluid itself, by which the use of the gland may be fairly estimated. Every anatomist is fully acquainted with the difficulties attending such an investigation, from the delicacy of the structure of this part; and reference in this, as in many other cases, to comparative anatomy, to illustrate its structure and functions, has been necessary. The calf and lamb have furnished this assistance to Sir Astley, and the gland in these animals he has been able readily to inject, and to dissect, and thus to show the relative situation of parts, to view the secreting structure, and to collect, in sufficient quantity, the secreted fluid for the purpose of analysis. The existence of this gland only in the fœtal and infantile state, unless when affected by disease, shows that it performs some function necessary to this early period of life, and not belonging to later years. Sir Astley first describes the gland in the fœtal calf, and distinguishes its thoracic and cervical portions, its organization as a conglomerate gland, united in its several parts by a loose cellular membrane, beneath which is a reticular tissue, which serves to more immediately connect the lobes to each other, and unite the different parts of their structure. In addition, however, to these bonds of union, there is a vessel of communication between the different lobes, formed of a mucous membrane

internally, and a secretory structure more externally, and thus all the parts of the gland are bound together in general communication. A ligamentous structure serves further to strengthen the gland, and preserve its parts in union. The larger lobes of the gland are divisible into smaller ones, and these are found to contain a great quantity of a milky fluid. This structure is particularly described, the secreting cells displayed, and the reservoirs connected with them. The central vessel is in itself glandular. When the whole gland is unravelled, it gives the appearance of a chain of beads of irregular shapes. The arteries are very numerous, and are derived from the internal mammary, the common carotid, the superior thyroideal and the external carotid. The veins terminate principally into the internal mammary veins; but there is a vein peculiar to this gland, the *vena thymica*, which returns the blood into the internal jugular veins. The absorbent glands and vessels on the spinal portion of the thymus gland, are both large and numerous, and the vessels terminate in the jugular veins at their junction with the superior cava, by one or more orifices on each side. These have been named by Sir Astley the *thymic absorbent ducts*. The nerves are very minute.

The thymus gland, (or glands, for they may be divided into a right and left,) in the fœtus of between two and three months, is scarcely perceptible; at three months it increases in proportion to the relative magnitude of the fœtus, and grows in this proportion to the seventh month, when it rapidly increases in size, so that at nine months it weighs at least half an ounce. After birth, it increases, and continues large to the first year, when it begins to decrease; and generally three or four years before puberty, it entirely disappears as a gland, leaving traces only of a ligamentous or reticular structure.

Hewson considered the thymus gland as an appendage to the lymphatic glands, but Sir Astley shows the great dissimilarity of their structures. It is not necessary here to detail the opinions that previous physiologists have entertained of the office of the thymus gland; it is enough to notice the physiology as laid down by our author. The office of the thymus gland he conceives to be, to "prepare a chylous fluid well fitted for the fœtal growth and nourishment from the blood of the mother before the birth of the fœtus, and consequently before chyle is formed from food; and this process continues for a short time after birth, the quantity of fluid secreted from the thymus gradually declining, as that of chylification becomes perfectly established."

Analysis of the fluid, made by Dr. Dowler, shows its composition to be of the following substances, placed in the order of their proportions:—

"one hundred parts contain sixteen of solid matter; incipient fibrin; albumen; mucus and muco-extractive matter; salts, consisting chiefly of muriate and phosphate of potash; and phosphate of soda. Of phosphoric acid, a trace. The thymus gland, therefore, secretes a fluid having in its composition all the component parts of the blood:—albumen, fibrin, and particles; which latter, easily discovered by the microscope, are found to be of a white, not a red colour as in the blood.

I have enjoyed, by the kindness of Sir Astley, the opportunity of examining, in detail, a collection of preparations, amounting to not less than two hundred and forty specimens in his private museum, upon this subject; and it is but bare justice to add my testimony to their value, and the satisfaction they have afforded me, in demonstration of the intimate structure and particular use of the thymus gland.

In 1836, the first number of "Guy's Hospital Reports" made its appearance, and to this work Sir Astley has lent his powerful aid. He has contributed:

22. "A Case of Femoral Aneurism, for which the external iliac artery was tied; with an Account of the Preparation of the Limb, dissected at the expiration of eighteen years." A brief account of this case was published in the year 1813, in the fourth volume of the Medico-Chirurgical Transactions, the operation having been performed in 1808. The patient survived until 1826, and this paper shows the condition of the limb after death, the vessels having been injected, to demonstrate the manner in which the main trunk had been tied. Two excellent plates accompany this paper, and display the dilated state of the ileo-lumbar, gluteal, and ischiatic arteries. The internal pudic was also enlarged; but no direct communication with the femoral could be detected. This case affords a beautiful example of the power of nature in accommodating herself to the condition of parts, and of the provision so wisely and so wonderfully existing, to support the frame under apparently the most difficult circumstances.

23. "Account of the first successful Operation performed on the common Carotid Artery for Aneurism in 1808, with the post-mortem examination in 1821." This patient, whose case has before been alluded to, died of a fit of apoplexy. The plate accompanying the account of the dissection exhibits the condition of the arteries at the basis of the brain, and is excedingly interesting.

24. In Part 2, Dr. Hodgkin has given an account of an "Unusually-formed Placenta, and Imperfect Fœtus," and Sir Astley Cooper has minutely examined into the structure of these productions. The placenta was divided into two unequal cavities, one of which contained a well-formed, the other

an imperfect fœtus. The membranes surrounding both were distinct, but proceeded from the single placenta. The umbilical vein was, relatively to the size of the placenta of great magnitude. The funis of the perfect child had two umbilical arteries and one vein; that of the imperfect, only one umbilical artery and vein. A communication between the two fœtuses existed by means of a large branch of the umbilical vein, and there was also an anastomosis of the umbilical arteries. The consolidation of the placentæ of two children into one is of very rare occurrence, and on this head Sir Astley quotes Dr. Blundell, who had once a preparation showing it. Sir Astley has given a minute account of the dissection of the imperfect fœtus, and his opinion as to the mode in which it was nourished, viz. through the agency of the heart and vessels of the perfect child, for the imperfect one was without the most important organs in the circulating system.

25. In Part 3, Mr. T. W. King has published, "Observations on the Thyroid Gland;" and it appears from this paper, that Sir Astley had in 1826-27 made various examinations into the nature of the fluid secreted in this organ. Dr. B. G. Babington analysed it for Sir Astley, and found it to consist principally of albumen, but he also detected the presence of gelatine and mucus. Mr. King's inquiry into the structure of the gland corresponds with that of Sir Astley, though he was quite ignorant of the researches previously made by Sir Astley, and the experiments he had mentioned for many years in his anatomical lectures. They are of too elaborate a nature to admit of analysis in this place.

26. "Some Experiments and Observations on Tying the Carotid and Vertebral Arteries, and the Pneumo-Gastric, Phrenic, and Sympathetic Nerves." The power of the system in establishing an abundant and competent circulation by means of anastomosing vessels, when the main trunk is rendered impervious, either by disease or from the application of a ligature, has been frequently demonstrated in the cases previously noticed in this memoir, as well as by the repeated observations of several surgeons, and the experiments made upon living animals. It was not, however, sufficient, in the mind of Sir Astley, to establish this fact, to show that the circulation through the iliac arteries could be prevented by an aneurism of the aorta above the bifurcation—that the external and the internal iliacs could be safely tied, as in the cases of Mr. Abernethy, Sir Astley Cooper, and Mr. Guthrie, on the former vessels, and of Mr. Stevens on the latter; but it required further experiments, in his opinion, to demonstrate the intimate union between the functions immediately essential to life, to display the connexion between the brain and other organs, and the necessity which exists for a due supply of arterial blood to maintain cerebral action. With

this view, Sir Astley has reported various experiments made by him upon different animals, illustrating the effects produced by tying the vertebral and carotid arteries in the dog and the rabbit, and placing ligatures also upon the pneumo-gastric, phrenic, and grand sympathetic nerves. The details of these several operations cannot here be given, they must be carefully perused; but the inference to be drawn from them may be thus stated. The carotids appear in these animals to serve rather for the supply of blood to the external parts of the head than to the brain itself, and ligatures upon them do not produce such serious results as upon the vertebral arteries. These are more important as regards the brain and its functions. Compression upon the carotids and vertebral arteries at the same moment destroys the nervous functions immediately. This is effected by the application of the thumbs to both sides of the neck, below the sixth vertebra, (the trachea remaining quite free from pressure,) when respiration entirely ceases, with the exception of a few convulsive gasps. I have witnessed this experiment, and it is very striking in its character: pressure for one minute entirely destroys the animal, without the infliction of pain—if for a shorter time, (a rabbit being the subject of the experiment,) the animal speedily recovers, and from a state which strongly resembles intoxication. There is a loss of voluntary power, and the animal is unable to direct the action of his muscles to any given point, or in any certain course. The experiments of Sir Astley on the pneumo-gastric nerves are important, and show that they assist in the support of the function of the lungs, by contributing to the changing of the venous into arterial blood, and that they are also necessary to the act of deglutition. In his experiments of applying ligatures, and of dividing the phrenic nerves, he produced asthma of the most determined character, and death in less than half an hour.

27. In February 1836, Sir Astley, in the course of his experiments on the compression of the carotid and vertebral arteries, found in the rabbit, and afterwards in the guinea-pig and ferret, a superior laryngeal ganglion. The superior laryngeal nerve is distributed almost entirely on the mucous membrane lining the larynx, and gives to that organ its extreme sensibility. The position of the ganglion, Mr. E. Cock has shown varies in different animals, in accordance with the point at which the nerve is given off from the pneumo-gastric trunk. Sir Astley has been so kind as to dissect, and show me this ganglion in the rabbit; and the particulars relating to it, in this and other animals, are ably stated by Mr. E. Cock, in the fifth number of the Guy's Hospital Reports.

28. In the sixth number of the same work, Sir Astley has printed a paper "On Spermatocele, or Varicocele of the Spermatic Cord," a disease

of frequent occurrence. Among the causes enumerated by Sir A. as particularly conducive to this affection, he mentions the injudicious use of belts around the body; promotive of this, as well as other diseases for which they are most absurdly recommended. The diagnostic marks of this affection are clearly stated, and the treatment for those cases in which the pain is great, consists of the removal of a portion of the scrotum, by which a diminution of the size of the veins of the spermatic cord is effected. Several cases are related, in which this mode has been followed with great relief, and it can be done with perfect safety.

29. One other work only remains to be mentioned: "The Lectures on the Principles and Practice of Surgery." I have already noticed the talents of Sir Astley as a lecturer, and endeavoured to depict him in that character. I have not overdrawn the portrait. I feel that I have not done justice to his merits, and if any thing need be brought forward to prove the truth of this remark, it would be afforded in the statement that various editions of his lectures have been published by Jones, by Syder, in the Lancet, and by Mr. F. Tyrrell, the surgeon to St. Thomas's Hospital. The latter edition has been corrected by the author, and must, therefore, be looked upon as the most authentic; but it remains an unfinished work, three volumes only are published, the first in 1824, the second in 1825, and the third in 1827. It is to be hoped that Mr. Tyrrell will shortly be able to complete the series. To attempt an analysis of a course of lectures, is out of the question; they ought to be in the library of every surgeon, and they cannot be too often referred to, for they contain a most astonishing quantity of facts, the produce of most extended observation and practice.

Among the numerous improvements in surgical science introduced by Sir A. Cooper, one ought in particular to be mentioned, as it has been extensively employed, and saved great pain, inconvenience, and danger. I mean the operation of puncturing the urethra instead of the bladder, in cases of retention of urine arising from impermeable stricture. I have seen Sir A. do this in many cases, and Mr. Travers assures me, that as far back as the time of his apprenticeship to Sir Astley, he witnessed its performance even with his simple pocket-lancet. It has since been done by all surgeons of eminence.

The limit prescribed to these memoirs has been, in this instance, already much exceeded; the labours of the distinguished individual, whose professional character and works have been under review, have demanded it. The tribute of applause, nay, of the highest praise, is due to such splendid exertions; but what language can sufficiently express the admiration the profession must feel of the manner in which Sir Astley is now closing his

career? not by revelling in inglorious ease, or in the enjoyment of luxuries which a large fortune might readily afford him; but by employing, in a manner more laborious than any other individual in the profession, the whole of his time in anatomical and physiological inquiries—in bringing up the results of his practice, and in leaving to posterity a legacy of imperishable value. Sir Astley has studied the book of nature—he has been one of her most vigilant inspectors—he has traced her in every fibre, and explored her in every cell, and he has recorded the glorious products of his labours. The fruits of these will be the advancement of medical and surgical knowledge, and a mitigation of the sufferings of his fellow-creatures. This reflection must be his reward here. Upon the decision of posterity he may safely rely, and say with the poet,

> "Time is the judge; time has nor friend nor foe;
> False fame must wither, and the true must grow."
>
> YOUNG.

James Copland

JAMES COPLAND, M.D. F.R.S.

"Qui omnium rerum atque artium, rationem naturamque comprehenderit."
CICERO.

THE Practice of Medicine may very properly be divided into two branches: 1st, That which relates to the preservation of health, and the consequent prolongation of life; and, 2nd, The cure of diseases. These are the objects of the physician—to excel in them, we have the authority of Dr. Gregory for saying, that "a greater compass of learning is necessary than in any other profession." Dr. Thomas Young says, "There is no study more difficult than that of physic: it exceeds, as a science, the comprehension of the human mind." And again, "Physic is one of those departments in which there is frequent necessity for the exercise of an incommunicable faculty of judgment, and a sagacity which may be called transcendental, as extending beyond the simple combination of all that can be taught by precept." Hence its distinguished professors have been regarded with respect and veneration in all ages. It demands the possession of a liberal education and accomplishments, and affords the most abundant opportunities for the exercise of humanity and all the kindlier feelings of our nature. It has been well described as the duty of a physician "to take every man, who entrusts himself to his care, as he is, with all his failings, and to treat him in such a manner as to obtain his confidence and to fulfil his wishes. Men of all classes and ranks of life, of all dispositions, capacities, characters, and opinions—in every imaginable situation, of every age, constitution, and temper—have equal claims to his assistance and his attention. And the same authority (Vogel) declares, that "perhaps there is no science which requires so penetrating an intellect, so much talent and genius, and so much force of mind, so much acuteness and memory, as the science of medicine. For the full attainment of its proper and ultimate object, it requires also indispensably the possession of stability of judgment, rapidity of decision, and immovable firmness and presence of mind; readiness

of recollection, coolness, flexibility of temper, elegance and obsequiousness of manners, and a profound knowledge of mankind, and of the secret recesses of the human heart." It would, perhaps, be a difficult, and it would certainly be an invidious task, to attempt to name any physician more fully qualified for the exercise of his profession than the respected individual whose name stands at the head of this memoir.

Tiedemann has justly remarked, in his "Physiologie des Menschen," that there are many physicians who are excellent theorisers, but who never become skilful practitioners; for, with all their accumulated information, they know not how to recognize the individualities of a case, nor to reduce the symptoms to any general rule—such, says he, are all merely book-men, who have acquired no skill in the sick room. On the other hand, there are physicians who treat all cases after the analogy of previous ones, and the results of their experience in general, and employ, without being able to give any reason whatever for so doing, certain remedies which they may have used on some former occasion with advantage. Such are the sheer empirics, the routine men, the despisers of all theory, and the searchers after and triers of every new remedy proposed, by those, at least, of the same school. The combination of these two classes, so forcibly drawn by the celebrated German physiologist and physician, can alone form the truly scientific practitioner, for every case has, in some degree or other, something peculiar belonging to it, arising, probably, from difference of age, sex, constitution, habits of life, &c., and therefore requiring in its mode of treatment a modification of the means to be employed; which, however, are based upon a general principle applicable to the class of disorders to which it may be allied.

Dr. James Copland, the contemplation of whose character and talents have given rise to the preceding remarks, is a native of the Orkney Islands, and was born in November, 1791. He is the eldest of nine children. His father having removed to the island of Noss in Zetland, well known for its remarkable natural scenery, he was placed, at nine years of age, at a school in Lerwick, in the family of the then clergyman of that town. He continued to reside there until he was fourteen, when he was removed to an adjoining clergyman's, where he remained two years. At the age of sixteen, his father took him to Edinburgh, and in November, 1807, he commenced his studies at the university of that city. He continued to study during the usual sessions, in the literary, mathematical, and philosophical classes, preparatory to his intended entry upon the study of divinity. But this not being in accordance with his own inclination, he chose the profession of medicine. During this preliminary part of his education, he studied

under, and became acquainted with, Professors D. Stewart, Leslie, Playfair, Brown, and Ritchie, and acquired a taste for metaphysics, occasionally afterwards indulged in, when he became editor of the London Medical Repository, and in his notes to Richerand's Physiology. Previously to his entering upon the study of medicine, and during the college vacations, he sometimes visited the Zetland Isles. The Rev. Dr. Fleming, the able author of several works on physiology and natural history, was then minister of the parish in which his father resided, and was a frequent visiter at the house of the latter. He thus acquired a taste for natural history and geology, to the cultivation of which these remote isles are remarkably favourable. Entering upon the study of medicine, his attention was entirely devoted to the acquisition of those departments of science upon which medicine is more immediately based. At the commencement of 1815 he wrote his thesis, and the other Latin exercises required at that time for a degree in medicine. He did not, in these exercises, confine himself to the usual limits, but in all of them he entered fully into the doctrines to which they more particularly referred, and proposed views which were then novel, but which have since been more generally adopted. The chief of these are—the origin of inflammation in lesion of the nerves supplying the capillary vessels; that rheumatism is essentially a disease of the nervous system, the vascular disturbance, general or local, being consecutive and contingent; that increased function of the liver is often consequent upon impaired function of the lungs; and that, whilst high ranges of temperature and humidity of the air diminish the production of carbonic acid in respiration, they increase the secretion of bile, and consequently bilious disorders, in intertropical climates, and in warm seasons in temperate countries, &c.; owing to the changes produced in the blood by respiration being imperfect or insufficient.

Having attracted the notice of the professors by his examination and exercises, and taken his Doctor's degree, he came to London in August, 1815, with the intention of seeing the practice of the London Hospitals. But, after the devoted attention he had paid for two years to the medical and clinical practice in the Edinburgh Infirmary, he found little to attract him in the medical department of the London hospitals at that time. In surgery, however, it was different, and to this he paid considerable attention.

Tired of an inactive life in London, and anxious to enter upon some enterprise or undertaking, but possessing inadequate means and interest,—having lived eighteen months in the metropolis without employment, without friends, and with very few acquaintances,—he was offered a medical appoint-

ment to the settlements on the Gold Coast, belonging to the late African Company. Various considerations induced him to entertain the proposal, particularly a desire of becoming practically acquainted with the diseases of warm climates, and of visiting those parts of Africa which seemed most likely to afford opportunities of entering on inland discovery. Confiding in his robust constitution, his then spare habit of body, and being both abstemious and temperate, with a great flow of animal spirits, he anticipated no risk from the pestilential climate of the western coast. With the offer of the above appointment, but with the intention of not accepting it, or of not being fettered by it, until he should arrive at the Company's head-quarters, when he might be better able to judge of its duties, &c., he took his passage at the commencement of 1817, in a vessel proceeding to Goree, the Senegal, and Gambia, at each of which places he remained a few days. He next visited Sierra Leone, where he resided two or three weeks, and saw, with the medical men of the settlement, a number of cases of the prevailing diseases.

From this place he took his passage in a ship which was to proceed along the coast to trade with the natives. But the vessel had been hardly out of sight of Sierra Leone, when fever made its appearance, and thirteen or fourteen of the sailors (about three-fourths of the crew,) were soon attacked by it. The vessel was also, at this time, dismasted by a most violent tornado. In this emergency, he devoted his attention to the sick men, and, with the aid of the captain's ill-provided medicine-chest, he succeeded in restoring them to health.* Having landed soon afterwards from this vessel, Dr. Copland proceeded along the coast through various savage tribes, sometimes by land, occasionally in canoes, and at other times in small trading vessels, and took every opportunity of visiting the chief places and native towns. After several risks and detentions, he at length arrived at the European settlements on the Gold Coast, and resided some months at the principal British fort—Cape Coast Castle. Various circumstances, and particularly the great difficulties placed in the way of inland research, afterwards induced him to return to Europe. In order to obtain some information of the countries bordering on this part of the western coast, which extends eastward and southward from Cape Coast Castle, to the Gulf or Bight of Benin, he took his passage to England in a

* In the memoranda kindly furnished to me by Dr. Copland, he states, that during his dangerous excursions in this quarter, there was not a merchant or trading vessel of the very many which he saw or heard of, that was provided with a surgeon; although he believes that the number of seamen who return from this part of the world, does not average one-third of those who proceed thither.

trading vessel, proceeding in the first instance to that part of the coast. After a most hazardous and tempestuous voyage, he arrived in England early in 1818. He afterwards proceeded to France and Germany, with the view of observing the practice of medicine in those countries. He remained abroad the greater part of that and the following year; and early in 1820 he returned to London, took a house at Walworth, and became a licentiate of the Royal College of Physicians. In that year he commenced writing on various medical subjects, and communicated papers on the Medical Topography of the western coast of Africa, on the yellow fever, and on rabies, to the Quarterly Journal of Foreign Medicine. In the same year he became a member of the London Medical Society, and co-operated with some others in establishing the South London Dispensary, for the poor of the Lambeth, Walworth, and Kennington districts. He continued physician to this charity for two years, when he resigned. In this year (1820) he was elected Physician to the Dispensary, now the Royal Infirmary, for the diseases of children. About this time he offered his services, through Sir James M'Grigor, Bart., to the government, to investigate the origin and nature of the epidemic yellow fever, that had then appeared in the south of Spain, stipulating for no reward but the protection of the government during his mission, and his expenses. But ministers had already directed Dr. Jackson, a declared partisan of non-infection, to proceed on this mission. Dr. Copland considered himself well fitted for the investigation, both by education, and by his previous researches into the nature of the diseases prevalent in the settlements of Africa. He was, besides, entirely unbiassed, and was no partisan of either doctrine of the origin of yellow fever.

In 1821, Dr. Copland published a case of chorea, consequent upon rheumatic carditis, terminating in universal paralysis, in which he narrowly inspected the body after death, and showed the dependence of the disease, in this case, upon chronic inflammation of the membranes of the spinal chord, and effusion within the theca vertebralis. The case assists us towards obtaining a knowledge of the pathology of this singular affection. Its complication with rheumatism, rheumatic pericarditis, &c. was first pointed out by Dr. Copland; and the researches of Dr. Prichard and Dr. Roeser have served to confirm his observations. Dr. C. has treated of the subject at length in his Dictionary of Practical Medicine. He also published, in the London Medical Repository, and London Medical and Physical Journal, of this year, Memoirs on Human Rumination, and on Chronic Inflammation of the Peritoneum. The former communication is singular and interesting. It is a well-authenticated and ably related

case of this peculiar faculty occurring in the human species. The description of the case, and the minute detail of the feelings of the subject of it, together with the different steps of the process, will be read with much interest. References are given by Dr. Copland to authorities for similar instances. In the latter paper, two cases are detailed, and exhibit the disease arrived at the last stage of structural derangement. Chronic peritonitis has only been looked upon as an idiopathic disease in our own times, although the ancient physicians, Platerus, Fernelius, Ballonius, Riverius, and others, describe it separately as a primary disease, or in conjunction with enteritis. Dr. Copland attributes to Bichat the merit of having, in the present day, distinctly adverted to the chronic disease of the peritoneum, and it forms one of the results of his classification of the membranes. (See his Anatomie Générale, vol. ii. p. 558.) To the late Dr. Pemberton, however, we are indebted for the first account of it in this country; but he makes no allusion to the tuberculated condition described by Bichat, and afterwards so ably demonstrated by Dr. Baron, as characteristic of the disease. Whether this condition be constant or not, will, however, admit of doubt, since neither Dr. Copland nor M. Broussais, have been able to detect its presence, although anxiously making research for it. Dr. Copland is not disposed to agree with Dr. Baron, either as to the seat of these tubercles, or their mode of production. He does not conceive that the granulated and tuberculated structure observed in the chronic disease of the peritoneum, derives its origin from hydatids, or from dilated lymphatics, or from dilatation of the capillary blood-vessels; on the contrary, he believes that the diseased structure may be traced to, and may be seated in the cellular tissue, immediately subjacent to, and connecting this membrane to the adjoining parts; and that it is produced in that texture by the chronically inflamed state of the capillary vessels, vessels opening in that tissue, secerning a viscid lymph, which, from its state of fluidity, and the more compact nature of this texture immediately underneath the peritoneum, cannot flow far from the vessels from which it issues, nor communicate with the similar fluid in its vicinity; the peritoneum is, therefore, he says, elevated into a tuberculous appearance, and as these increase in magnitude, the cellular substance intervening between the minute collections of viscid fluid, becomes condensed into cysts; and hence, as the contents accumulate, any communication between them becomes more difficult.

He also published experiments and practical observations on the operation of terebinthinate medicines, and on their use in disease. He also wrote papers on inflammation, and various reviews. At this time he was

applied to by the proprietors of the London Medical Repository, to become Editor of that Journal. His reviews were generally critical and severe. Shortly after the beginning of his editorial duties, he was requested by the council of the Medical Society to give the annual oration at the anniversary on the 8th of March, and he addressed the Society on a most comprehensive subject, namely, *A general view of the Grand Agents by which inanimate matter and organized bodies are governed.* He first considered the agent or principle in nature which governs inanimate matter, and endeavoured to show that attraction or gravitation, chemical affinity, combustion, crystallization, magnetism, light and heat, both as existing in the solar rays, and as otherwise produced—in short, that all the phenomena of the inorganized world, and of the solar system, may be ascribed to the agency of electricity. He next took a view of the agent or principle which governs animate matter; showed that the principles which govern inorganized matter, are alone totally inadequate to explain either the primary production of the organized creation, or the continuation of its various tribes, and argued that *vitality* is a first principle in nature: that its existence and association with matter, were established in its various states and manifestations, soon after the principle or agent, which governs inanimate matter, was called into being; and that it controls the affinities of matter brought within the sphere of its operation, giving rise to combinations and results different from those which these affinities dispose matter to assume. It is to be regretted that Dr. C. did not publish this ingenious production; but portions of it appeared subsequently, in his appendix to M. Richerand's Elements of Physiology. Having had the opportunity of seeing the original manuscript, I find in it views which subsequent researches would appear to warrant, and opinions which have much more recently been put forth as original.—In this oration, Dr. Copland referred the functions, which are *strictly vital*, and which all organized bodies evince, to the influence of a ganglial nervous system, existing in some one form or another, and exerted upon circulating vessels or parts containing fluids capable of affording nourishment. He afterwards took a view of the higher manifestations of life, as displayed in the more perfect animals, and most remarkably in man himself; and argued that the brain is the organ of mind, and the instrument of the mental manifestations; whilst the cerebellum, medulla oblongata, and spinal chord, are most intimately related to, or possess a complete control over, sensation and motion. He concluded his address with a view of the higher faculties of mind, as distinguishing man from the lower animals; argued against the doctrine of a continuous or uninterrupted rise of mental power, from the lowest reptile to the human species; and contended that

reason, or the faculty which man possesses of obtaining a most extensive range of ideas, from reflecting upon the operations of mind itself, places him far above all other animals; that reflection, or pure intellection, is truly mind—is the immortal part of the human constitution.

The chief articles written by Dr. Copland in the first volume of the Medical Repository, were, 1. *On the Pathology of Fever, with an historical view of opinions on the subject.* 2. *On Life and Organization.* 3. *On Artificial Eruptions in the Cure of Disease.* 4. *On Intestinal Worms.* 5. *Outlines of a Series of Researches into the Anatomy, Physiology, and Pathology of the Ganglionic Nervous System.* In this last memoir, he was the first who applied the independent functions of this system to pathology. Viewing the influence of this system upon the circulating and secreting organs to be intimately allied to, if not productive of, vital phenomena, he founded on it a pathological classification of diseases, commencing with primary and simple disorders, advancing through more complicated and consecutive diseases, and terminating with organic lesions.

In 1822, Dr. Copland removed from Walworth to Jermyn-street, and continued to conduct the Medical Repository with great assiduity, publishing each half year historical sketches of the progress of medical knowledge in this country, on the continent of Europe, and in America. At the commencement of 1823, he was elected Consulting Physician to Queen Charlotte's Lying-in Hospital, through the influence of H.R.H. the Duke of Sussex, the President of the Institution, his name having been mentioned to His Royal Highness by the writer of this sketch; whose knowledge of him, at that time, was chiefly derived from his writings. The prevalence of infectious or malignant puerperal fever in this institution was, about this time, so great, as occasionally to require the wards to be shut for the purpose of cleansing. His plan of cure, by the free employment of calomel, opium, camphor, and turpentine, proved remarkably successful.

In this and the following years, he was engaged not only in editing the Medical Repository, but also in furnishing reviews of scientific works in monthly and quarterly publications, and in revising, after the latest French edition, M. Richerand's Elements of Physiology, and in adding notes with a copious appendix to that work.

In the notes and appendix to M. Richerand's Elements of Physiology, the first edition of which appeared early in 1824, Dr. Copland developed his views as to the connections and functions of the ganglial nervous system, conformably with what he had already published in the Medical Repository. He showed the influence of this system upon the blood, and upon the production of the various forms of inflammation, and first sug-

gested the idea that, instead of stating the nerves to originate in the large nervous masses, it would be conformable with the developement of the embryo and textures, and with comparative anatomy, to view them as arising in the membranes, structures, and organs, which they are generally said to supply. In this work also, he exhibited a new arrangement and view of the nervous functions and mental manifestations, commencing with those which are instinctive and most generally diffused through animal creation, and terminating with those which are purely intellectual and reflective. Besides these, he advanced novel views on other subjects, particularly as to respiration, and the changes thereby induced in the blood, the developement of the tissues, and the sympathetic actions. He arranged the sympathies into the *direct* and *reflex;* the former taking place directly through the medium of continuous membranes, and nervous communication; the latter, or the "*Reflex*," depending on the excitation conveyed to the cerebro-spinal centres, and thence reflected to related organs or parts. Thus the "Reflex Sympathies" of Dr. Copland are identical with the reflex functions of Dr. M. Hall.

During the period in which Dr. Copland conducted the Medical Repository, he endeavoured to support the character of the profession, by exposing whatever he considered calculated to debase it. He attacked the Scottish Universities, which conferred degrees upon the recommendation of other physicians, or rather by purchase,—a practice which they soon afterwards relinquished; and he exposed the voluntary degradation of Surgeons and Licentiates of the Company of Apothecaries, who kept open shops, and became the agents of quacks in selling their nostrums.

In 1825, Dr. Copland projected an "Encyclopediac Dictionary of the Medical Sciences," and drew up a prospectus of the undertaking. In this he was to have been assisted by his friend Dr. Dunglison, now of the United States, and by the late Dr. Gordon Smith; and the work was actually agreed upon by Messrs. Underwood, medical publishers, when the panic of this period caused them to relinquish it. In the winter of 1825 and 1826 he lectured on the principles and practice of medicine, and continued his lectures the two following sessions at the medical school in Little Dean-street, which had been built by the late Dr. Armstrong. He relinquished the editorship of the London Medical Repository at the end of 1826, having conducted that work for five years, and having published in it many articles, containing valuable practical opinions, as well as evincing much literary research. Amongst these may be particularized a series of articles on the Materia Medica, in which the use of camphor in disease is most fully and practically considered, and in which the cold affusion on the

head was first recommended for the recovery of persons poisoned by prussic acid, or by substances containing it.

In 1828 and 1829, Dr. Copland contemplated a Dictionary of the Medical Sciences: and so zealous was he in his endeavours to accomplish this, that he drew up a very full and detailed prospectus of the work, exhibiting a view of the manner in which he proposed that the different departments of medicine should be discussed, and had it printed for private circulation. Messrs. Baldwin and Cradock agreed with Dr. Copland to publish the work; but whilst he was engaged in making his arrangements and in procuring contributors, his intentions were frustrated by their refusing to proceed with the undertaking.

Some time after this disappointment, he found that a "Cyclopædia of Practical Medicine," comprising only the practice of medicine, morbid anatomy, general therapeutics, and medical jurisprudence, was about to be commenced. It was, therefore, with no small pleasure that he undertook the offer made to him by Messrs. Longman and Co., at the end of 1830, to write a "Dictionary of Practical Medicine," and, single-handed, to contest the field with the numerous editors and contributors to the Cyclopædia of Practical Medicine.

To compile a dictionary of medical science is an herculean task—*magnæ molis opus*—to any association of men; but to be the production of one individual, is a most extraordinary undertaking. Dr. Copland has attempted this; and five parts being now published, there is no difficulty in estimating its value, and forming an opinion as to the ability of the author of the work. Such a work requires a union of industry and sound judgment, and a capability of selecting and condensing all that is valuable in medical science. It is not too much to say, that Dr. Copland has, by a diligence of research, an extent of learning, and a clearness in detail, produced in his "Dictionary of Practical Medicine" a complete body of medical literature, and an imperishable monument of his zeal and ability. Some complaint has been raised at the slow manner in which the work proceeds; but Lord Bacon tells us, that "affected despatch is one of the most dangerous things to business that can be;" and he sagaciously adds, that "we are not to measure despatch by the times of sitting, but by the advancement of the business." And, in another place he says, "Above all things, order and distribution, and singling out of parts, is the life of despatch; so as the distribution be not too subtile." Order, according to Sir William Temple, "is the effect of thought, and cause of all good productions;" and that which cannot be done often, must be long in doing:

Quod sæpe fieri non potest, fiet diu.—SENECA.

Without order, the multiplicity of observations in the science of medicine must accumulate in a manner calculated to confuse the mind, and defy all useful deduction. Collected and arranged together, they form a system of instruction, and depict the condition of the science. The progress of research will thus be made evident, and future facts may be engrafted upon it with ease and facility.

The French physicians and surgeons have the merit of setting the example in the production of dictionaries containing a real body of medical science. How such a work can be best executed—whether by an associated number of professional men, or by a single individual, remains to be proved. There are advantages and disadvantages—much may be said upon both sides: on the one hand, you have the collected reading and experience of a number of individuals, but also the consequent disagreement and clashing of opinions that in so conjectural a science as medicine must necessarily occur; and, on the other hand, you have the results carefully obtained by one individual who embodies the whole into a system, and presents the entire science under one point of view, subject, however, to the occasional embarrassment arising from the introduction of the author's speculative opinions. If an estimate of the comparative merits of these modes is, however, to be formed from the specimens of Dr. Copland's work now before the public, the palm must most unquestionably be yielded to him, for condensation without sacrifice of perspicuity appears to be the principle upon which this extraordinary literary labour has been established, and the references to the authorities cited are most faithfully and most honourably recorded at the conclusion of each separate article. Dr. Copland may indeed be said to have "a wonderful talent for packing thought close, and rendering it portable." Analysis of such a work is entirely out of the question, nor is it easy to convey to those who have not seen the "Cyclopædia Medica," as a justly celebrated physician and journalist has styled it, a correct idea of the nature of its composition.

In 1831 Dr. Copland had composed his article on cholera for the Dictionary, and in 1832 he was induced to publish it separately in a small volume, by the appearance of the disease in the north of England. He had paid more than ordinary attention to the subject of the pestilential cholera, from its irruption in Bengal to the time of its appearance in London. He had made himself acquainted with all the principal works that had been written upon it, and he had also examined the reports and documents sent from 1817 to 1827 by the medical boards and superintending surgeons of the three Indian presidencies to the board of Directors of the Hon. East India Company. Dr. Copland does not look upon the disease as the com-

mon spasmodic cholera of warm climates in an epidemic form merely, an opinion very current among professional men. He regards it as not only distinct from all the visitations of the disease to which the name of cholera has been attached, and with which the history of medicine has made us acquainted, but as altogether a new disease, and one totally unknown to medical science previously to the year 1817, when it first made its direful irruption in Jessore, a populous and unhealthy city in the centre of the Delta of the Ganges. Dr. C.'s experience in a hot and insalubrious climate qualified him to form an opinion on the matter, and he had himself suffered from a severe attack of spasmodic cholera; but the symptoms attendant upon this affection he found to vary materially from the prevalent epidemic. The investigations of Sir Wm. Russell and Sir D. Barry confirmed our author's views. But Dr. C. does not consider the distemper simply as an epidemic, and entirely owing to some unknown constitution of the air, for he is satisfied that we have no instance on record of an epidemic of nearly fifteen years' duration, without any interruption, unconnected with infection, of which circumstance and condition he thinks proofs were abundantly exhibited in the East.

From the sketch thus given of the labours of Dr. C. up to the present time, the reader will find no difficulty in forming an estimate of the zeal he entertains for his profession, and of the value of the contributions he has made to medical science. As a practitioner, I am able to speak of Dr. C. from abundant opportunities of observation. He is firm and decided—without haste or rashness. His extensive physiological information is brought to bear upon the treatment of disease, and to strip medicine of that empirical character which is often too closely connected with it. Dr. C. has been a Member of the Royal Medico-Chirurgical Society from the year 1822; in 1833 he was elected a Fellow of the Royal Society, and in 1837 a Fellow of the Royal College of Physicians. He is the lecturer on the theory and practice of physic at the Medical School of the Middlesex Hospital; and during the present year he delivered the Gulstonian lectures at the College of Physicians, on the important subject of contagion.

Henry Halford

SIR HENRY HALFORD, BART., G.C.H.

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS.

> ——————"Me they sent
> To wait on pain, and silent arts to urge,
> Inglorious, not ignoble; if my cares
> To such as languish on a grievous bed,
> Ease, and the sweet forgetfulness of ill,
> Conciliate."
>
> AKENSIDE.

THE study of the science of medicine cannot but be regarded as one of the noblest and most interesting pursuits that can engage the attention of the human mind. To contemplate the wonders of creation—to behold them as exhibited in the intricate structure and extraordinary mechanism of the human frame—to mark the changes which ensue at the various periods of life, and under a variety of circumstances—to render, by a diligent study of these phenomena, nature itself tributary to the comfort and happiness of mankind—to relieve the pains of suffering humanity—to restore the bloom to the cheek of faded beauty—to dispel the gloom of disordered intellect—and to assuage the agonies of expiring nature—these are among the objects and the duties of the physician. The faculty of accomplishing these falls to the lot of comparatively but few, and requires the possession of varied and powerful talent. The union of literary taste and graceful scholarship with professional knowledge, which can never fail of affording delight and exciting interest, is strongly evidenced in the writings of the subject of the present memoir.

SIR HENRY HALFORD was born on the 2nd of October, 1766, and is the son of Dr. James Vaughan, Physician to the Leicester Infirmary, known to the public and the profession as an able practitioner, and the author of some "Observations on Hydrophobia; on the Cæsarean Section; and on the Effects of Cantharides in Paralytic Affections." Sir Henry received his education at Rugby, and went afterwards to Christ Church

College, Oxford, at which university he graduated. He took the degree of A.B. in 1787, M.A. in 1789, M.B. in 1790, and M.D. in 1794. He was elected a Fellow of the London College of Physicians also in 1794. Distinguished by the elegance of his manners, and the extent of his learning, it is not surprising that he should have excited attention in general society; and in March, 1795, he contracted a marriage with the Hon. Elizabeth Barbara St. John, third daughter of John, eleventh Lord St. John, and thus became established in the circle of the highest rank and fashion. Here his merits became duly appreciated, and he rapidly rose into notice as a medical practitioner. George III. appointed him one of his physicians, and all other medical honours were now before him. By the death of his mother's cousin, Sir Charles Halford, of the county of Leicester, he became possessed of an ample fortune, and changed his name, in 1809, by Act of Parliament, from Vaughan to that of Halford, and by royal favour a Baronetcy was conferred upon him in September of the same year.

There are few situations in the life of a professional man which, even in ordinary instances, are more painful, or incur a greater responsibility, than those which relate to attendance upon cases of disordered intellect. When, however, an aberration of mind affects the Sovereign and Ruler of the country, what task can be more arduous, and what talent is necessary to be exercised under such circumstances! Sir Henry Halford incurred this heavy responsibility, along with others no less sensible of its importance; and the manner in which the medical attendants of George III. acquitted themselves has been matter of praise and satisfaction. By virtue of their office, the Queen's counsellors had the nominating of the person to whose care the Sovereign should, under such unhappy circumstances, be committed; and the Rev. Dr. Willis, whose experience in insanity had been great, was selected. It is said, that Dr. Willis's treatment in the first two illnesses had made a lasting impression upon the monarch's mind, and that he could never, after his restoration to health, hear the name of Dr. Willis mentioned, without experiencing a shudder, and suffering an agony which was visible to all around. During Sir Henry's attendance, therefore, on the Princess Amelia, His Majesty desired him, in case of His Majesty experiencing a relapse of his malady, to take the care of him, adding, that Sir Henry must promise never to leave him, and that, if he wanted further help, he should call Dr. Heberden, and, in case of farther need, which would necessarily occur if Parliament took up the matter, Dr. Baillie. The introduction of these physicians when His Majesty became ill again, as he did very soon after, conciliated the confidence of the Queen and the Prince of Wales, who added the name of Sir Henry to the list of his

physicians in ordinary. The condition of the King is now matter of history, and the annals of Parliament give all necessary information upon the subject. The confidence reposed in Sir Henry by the Prince of Wales, was continued when the Prince became George IV., and thence descended to William IV., and to the present Sovereign, the Queen Victoria: thus has Sir Henry been physician to four successive Sovereigns. No other physician has attained such honours. Caius was physician to Edward VI. and the Queens Mary and Elizabeth; Sir Theodore Mayerne to Henry V., Louis XIII., and James of England. Ambrose Paré was surgeon to Henry II., Francis II., Charles IX., and Henry III.

Almost every member of the royal family, from the time of George III. has been under the care of Sir Henry. His attentions to the late Duke of York were so unremitting, that to manifest the sense entertained of them, certain augmentations and supporters were, by royal warrant, granted to the arms of Sir Henry in 1827. And, upon the decease of George the Fourth, a very splendid clock, surmounted by a bust of His Majesty, was presented to him by the Royal Family, in proof, as the inscription states, "of their esteem and regard, and in testimony of the high sense they enter-"tain of his professional abilities and unwearied attention to their late "beloved sister, the Princess Amelia, Her late Majesty Queen Charlotte, "His late Majesty King George the Third, His late Royal Highness the "Duke of York, and lastly, of His Majesty King George the Fourth."

Sir Henry has hitherto published but little, and that which has appeared consists principally of Essays and Orations, written for the Transactions, or read before the evening meetings of the College, to which he has most liberally contributed. He delivered the Harvæian Oration in 1800, and again in 1835, in consequence of the death of Sir George Tuthill, who had been appointed to that honourable office. These orations are distinguished by their classical elegance. The latter contains deserved tributes to the memory of Dr. Maton, Dr. Ainslie, and Dr. Powell.

The following extract will offer a good specimen of the President's latinity: "Et Ricardo Powell, et Henrico Ainslie, utrique contigit, in "medio vitæ cursu, et in maximâ utriusque utilitate, morbo defecisse; huic "vesicæ hæmorrhagiâ, illi paralysi.—Num id incommodo eorum et detri-"mento, an potius lucro apponam? Lucro sanè; Mens etenim humana "præsentire in posterum amat, et in futurum cupit prospicere. Sed in "hac festinatione urbis ac vitæ, in hac ambitionis occupatione et conten-"tione, earum rerum contemplationem, ad quas seriò et præcipuè animum "intendere debemus, quippe quæ ad immortalitatem, et æternam nostram "felicitatem spectant, facilè differre solemus, quia, quanquam aliorum

"officiis otiosi semper simus, nobismet ipsis, tamen, nostrisque curis "nunquam vacamus. Imperanda est igitur, et cogenda præteriti tem- "poris accurata recordatio, ut vitæ futuræ felicitas, certis conditionibus "promissa nobis, pietate et pœnitentiâ sedulo expetatur et elaboretur. Hoc "iis emolumento fuit, hoc Dei Optimi Maximi benignitas voluit, et propterea "forsàn, morbis eos plecti jussit."

"Me, si Deo placuerit ingravescentibus annis, imbecillitate valetudinis "impediri,—esto.—Id omne benevolentiæ Ejus acceptum referam. Sin "otii fructus detur, cum sanâ mente in corpore sano, ad vitam anteactam "recogitandam, et vestem, quasi colligendum, quæmadmodum Imperatori "ante cadendum in Capitolio curæ fuit, ut decorè, et cum dignitate dis- "cederet, laudem Deo majorem, majoresque gratias debiturus solvam."

On June 25, 1825, the New College of Physicians in Pall Mall East was opened, and Sir Henry delivered an Oration on the occasion in the presence of their Royal Highnesses the Dukes of York and Sussex, many of the nobility, and persons of distinction. This was the most splendid meeting ever held by the College, and an elegant collation was provided for the numerous assembly at Sir Henry's expense. The oration, which, like to the Harvæian, was delivered in Latin, is distinguished by the purity of its style, and is particularly valuable, as affording the testimony of the President, and the late Dr. Baillie, to the religious character and opinions of the medical profession. Sir Henry did well to avail himself of such an opportunity, to repel the assertions so constantly made by the superstitious, more animated with zeal than enlightened by knowledge, in subjects of physical inquiry, as to the scepticism and infidelity of the profession.

The Essays (published in 1831) are six in number, and have for their subjects:—

1. On the Climacteric Disease. 2. On the Necessity of Caution in the Estimation of Symptoms in the Last Stages of some Diseases. 3. On the Tic Douloureux. 4. On Shakspeare's Test of Insanity. 5. On the Influence of some of the Diseases of the Body on the Mind. 6. On the Καυσος of Aretæus.

Essay I. That condition of the human frame which marks the decline of its powers, and tends to its decay, has been regarded as the grand climacteric, and this Sir Henry seems disposed to consider rather as a disease, than a mere declension of strength, and decay of the natural powers. He describes it as "a falling away of the flesh in the decline of life, without any obvious source of exhaustion, accompanied with a quicker pulse than natural, and an extraordinary alteration in the expression of the countenance." This, however, it must be remarked, is a

condition frequently connected with other complaints; hence, it has not been before described as a disease *sui generis*. Sir Henry has observed that it is better characterized in males than in females, and he traces the occurrence of a common cold as one of the immediate causes of the disease. Mental anxiety operates strongly in its production. A disease founded in a decadence of vital powers is not to be remedied; it may, however, be checked by proper medical treatment, and by the exhibition of appropriate means for imparting tone to the system.

Essay II. On a Cautious Estimation of Symptoms in the Last Stages of some Diseases, may be read by all the younger members of the profession with great advantage.

In Essay III. Sir Henry has endeavoured to trace the origin of several cases of Tic Douloureux, and he has been successful in referring it to a lesion of the bony fabric, either by a carious condition, or by a preternatural deposition. He has confined himself principally to those cases in which the fifth pair of nerves have been affected, and in one instance he found an exostosis of the alveolar process, in another a disease of the antrum highmorianum, and in a third, a most remarkable case, the skull of the patient of which was exhibited at the College, an extensive deposit on the internal surface of the cranium, which must have inevitably caused considerable pressure upon the brain during the life of the patient, and the result of which was the termination of this, as of many other cases of neuralgic affection, in a fatal attack of apoplexy. The late lamented and amiable Dr. Pemberton, who was literally a martyr to the Tic Douloureux, and reduced by it from a comely person of portly stature, to that of a decrepit and emaciated figure, died apoplectic, and the skull, in his case, was found to be materially thickened, and a bony deposition laid upon the *dura mater;* and it is well worthy of remark, that Dr. Pemberton, prior to the full development of his disease, had been at times affected with abscess of the frontal sinuses. Sir Henry does not profess to account for all cases of this disease as proceeding from a disordered condition of the bone; but he has satisfactorily shewn that, in several cases, that state of parts is an attendant upon it, and it is one which ought not to be lost sight of by the practitioner, as an attentive observation of the phenomena presented may be the means of eliciting some satisfactory mode of cure. Sir Henry does not fail to trace the ordinary cases of neuralgia to some disorder of the digestive organs.

Essay IV. One of the very trying and difficult positions in which professional men chance sometimes to be placed, is well illustrated by Sir Henry, and his sagacity on this occasion cannot but be admired. It affords

an illustration of the advantages arising from a liberal education, and an attention to polite literature, in the exercise of an arduous profession. The immortal Shakspeare has left us a test of madness. Sir Henry proved the correctness of the test in a very interesting case:

> "———————— Ecstacy!
> My pulse as yours doth temperately keep time,
> And makes as healthful music. It is not madness
> That I have uttered: bring me to the test,
> And I *the matter will re-word, which madness*
> *Would gambol from.*" *Hamlet, Act III. Scene* 4.

"A gentleman of considerable fortune in Oxfordshire, about thirty-five years of age, sent for his solicitor, to make his will. He was in habits of strict friendship with him, and stated that he wished to add five hundred pounds a year to his mother's jointure, if she got well, she being then (to the knowledge of the solicitor and himself only) confined as a lunatic; to make a provision for two natural children; to leave a few trifling legacies; and then, if he died childless, *to make him, the Solicitor, his heir.* His friend expressed his gratitude, but added that he could not accept such a mark of his good opinion, until he was convinced that it was his deliberate judgment so to dispose of his property, and that decision communicated to him six months afterwards. In about six weeks' time the gentleman became deranged, and continued in such a state of excitement for a whole month, (during which he was visited constantly by Sir George Tuthill and myself,) as to require coercion every day. At the expiration of that time he was composed and comfortable. But his languor and weakness bore a proportion to his late excitement, and it was very doubtful whether he would live. On entering his room one day, to my question—how he found himself, he answered,—"Very ill, sir: about to die; and only anxious to make my will first." This could hardly be listened to under his circumstances, and he was persuaded to forego that wish for the present. The next day he made the same answer to the same question, but in such a tone and manner, as to extort from common humanity, even at the probable expense of future litigation, an acquiescence in his wish to disburden his mind. The Solicitor was sent for, and having been with him the preceding evening, met us, at our consultation in the morning, with a will prepared according to the instructions he had received *before the attack of disease, as well as to those given the last night.* He proposed to read this to the gentleman in our presence, and that we should witness the signature of it, if we were satisfied that it expressed clearly his

intentions. It was read, and he answered, 'Yes—yes—yes,' distinctly to every item, as it was deliberately proposed to him. On going down stairs with Sir George Tuthill and the Solicitor, to consider what was to be done, I expressed some regret that we, the physicians, had been involved in an affair which could hardly be expected to terminate without an inquiry in a court of law, in which we must necessarily be called upon to justify ourselves for permitting this good gentleman, under such questionable circumstances, to make a will. It occurred to me then, to propose to my colleague to go up into the sick room, to see whether our patient could *re-word the matter*, as a test, on Shakspeare's authority, of his soundness of mind. He repeated the clauses which contained the addition to his mother's jointure, and which made provision for the natural children, with sufficient correctness; but he stated that he had left a namesake, though not a relation, ten thousand pounds, whereas he had left him five thousand pounds only; and there he paused. After which I thought it proper to ask him, to whom he had left his real property, when these legacies should have been discharged,—in whom did he intend that his estate should be vested after his death, if he died without children? 'In the heir-at-law, to be sure,' was the reply. 'Who is your heir-at-law?' 'I do not know.' Thus he 'gambolled' from the matter, and laboured, according to this test, under his madness still."

But Shakspeare does not stand alone in the accuracy of his description of madness; its character, Sir Henry has shewn, is also well displayed by Horace, (Epist. lib. ii. 2, 128; and Sat. lib. ii. 3, 104,) and, in short, references might be appropriately made to numerous other ancient poets and philosophers. The pictures drawn by those masters of antiquity are applicable to all times and persons. Human nature remains the same. Nor is Shakspeare's test of insanity to be considered as sufficient to the detection of all the forms of this dreadful disease. So varied are its shapes, and so delicate often the shades of its character, that nothing is more difficult than a description of madness.

Essay V. Sir George Baker, Dr. Falconer, and others, have directed their attention to the effects of the passions of the mind in the production of diseases of the body. Sir Henry is anxious to draw attention to the influence of the diseases of the body upon the powers of the mind, and he has commenced the subject by noting the effects of some of the more marked simple chronic diseases on the mental powers. It is a subject well worthy of the physician's regard.

Essay VI. is upon the Κάυσος, or Burning Fever of Hippocrates and Aretæus, which is the Brain Fever of the moderns. An interesting illus-

tration of this disease is given at pp. 96, 98. The illumination of mental powers at the last moments of life has ever been a subject of astonishment, and but unsatisfactorily accounted for by philosophers. "The flickering lamp blazes with unusual brightness just as it expires." "The fit gives vigour, as it destroys."

Sir Henry's description of the phenomena of death is distinctly marked, and accurately delineated, and it leads him to the discussion of a point in medical ethics of the highest importance:—the propriety of making known to a patient, labouring under a fatal malady, the probable consequence of his disease. This is often a matter of the most delicate and difficult nature. The communication of such intelligence frequently involves the risk of shortening even the period of existence that may belong to the sufferer. Moral and religious considerations relating to the individual himself, and a sense of duty to those with whom he may be connected, will often impel one to the exercise of a task which, physically speaking, may be open to censure or condemnation. The experience of such a man as Sir Henry Halford is of great moment on such a subject, and he has well stated it in the following passage:

"And here you will forgive me, perhaps, if I presume to state what appears to me to be the conduct proper to be observed by a physician in withholding, or making his patient acquainted with, his opinion of the probable issue of a malady manifesting mortal symptoms. I own I think it my first duty to protract his life by all practicable means, and to interpose myself between him and every thing which may possibly aggravate his danger. And, unless I shall have found him averse from doing what was necessary in aid of my remedies, from a want of a proper sense of his perilous situation, I forbear to step out of the bounds of my province in order to offer any advice which is not necessary to promote his cure. At the same time, I think it indispensable to let his friends know the danger of his case, the instant I discover it. An arrangement of his worldly affairs, in which the comfort or unhappiness of those who are to come after him is involved, may be necessary; and a suggestion of his danger, by which the accomplishment of this object is to be obtained, naturally induces a contemplation of his more important spiritual concerns, a careful review of his past life, and such sincere sorrow and contrition for what he has done amiss, as justifies our humble hope of his pardon and acceptance hereafter. If friends can do these good offices at a proper time, and under the suggestions of the physician, it is far better that they should undertake them than the medical adviser. They do so without destroying his hopes, for the patient will still believe that he has an appeal to his

physician beyond their fears; whereas, if the physician lay open his danger to him, however delicately he may do this, he runs a risk of appearing to pronounce a sentence of condemnation to death, against which there is no appeal—*no hope;* and, *on that account*, what is most awful to think of, perhaps the sick man's repentance may be less available. But, friends may be absent, and nobody near the patient in his extremity, of sufficient influence or pretension, to inform him of his dangerous condition. And, surely it is lamentable to think that any human being should leave the world unprepared to meet his Creator and Judge, "with all his crimes broad blown!" Rather than so, I have departed from my strict professional duty, and have done that which I would have done by myself, and have apprized my patient of the great change he was about to undergo."

In addition to these Medical and Medico-Literary performances, Sir Henry has favoured the public with a curious account of the discovery of the head of the unfortunate King Charles, upon the opening of his coffin in St. George's Chapel, Windsor, April 1, 1813. The original MS. of this account is deposited in the British Museum, authenticated by the signature of the Prince Regent, who was present at the examination.

Since the publication of the "Essays and Orations," in 1831, Sir Henry has published some others, read at the meetings of the College.

In addition to those already noticed, in 1833 appeared a paper "On the Treatment of the Gout;" another "On Phlegmasia Dolens;" a third "On the Treatment of Insanity, particularly the Moral Treatment;" and a fourth "On the Deaths of some Illustrious Persons of Antiquity."

The gout is now, from the improved habits and manners of society, a disease of much less frequent occurrence than in former times, and the resources of art for the alleviation of its severe pains have been very effectually employed in the exhibition of various preparations of the colchicum. Discretion in the administration of such a remedy is, however, essential. Sir Henry does not usually employ it until the disease has fixed itself upon some one particular part of the body. He then orders the vinous preparation made from the root of this vegetable, and has never known a single instance of any untoward effect from it. The colchicum is not a new remedy for the disease; Sir Henry traces it under the name of Hermodactyls, employed by Alexander of Tralles in the sixth century. He satisfied himself on this head by engaging one of the king's messengers to procure for him at Constantinople some of the hermodactyls; and he laid them before the College of Physicians, to shew, by a comparison with some specimens of the roots of colchicum, the identity of the two substances. Few parts of the human frame appear to be free from the visitations of the

gout: Sir Henry has seen it in the kidneys, urethra, and prostate gland, also in the tonsils; and some practitioners contend for its having occurred in the organ of vision.

Phlegmasia Dolens is a disease generally supposed only to afflict the female sex: the occurrence of it, as connected with the pregnant condition of the system, has led to this error. Modern pathologists, and more especially Dr. David Davis, Dr. Robert Lee, and Dr. Sims, have shewn this disease to consist of an inflammation of particular veins, and have described it under the more appropriate name of Phlebitis. Consistently with this view of the malady, we cannot be surprised to learn that instances of it have been known to occur in the male sex, and Sir Henry has seen it in three cases within the last few years. Two of these are given in detail; and one is that of a late statesman, the Earl of Liverpool. The obstruction to the circulation of the blood, occasioned by this condition of parts in the venous system, was probably the cause of that disease of the brain which incapacitated him for the business of the ministry towards the close of his career, and ultimately proved fatal.

The Moral treatment of Insanity is a subject of peculiar interest, and there is much truth in the observation of Sir Henry, that 'there is no disease which appeals more forcibly to our best feelings, or which deserves better the serious attention of the philosopher, and the sympathy of the philanthropist; no one which requires the best skill of the physician, more than insanity.' This is a subject to which attention will be directed on some future occasion.

The "Essay on the Deaths of some Illustrious Persons of Antiquity," is a very curious and interesting paper. We have room only for one extract, which is important, as it appears to assist in fixing some of the discriminative signs by which the exhibition of a particular poison may be determined. There are few persons unacquainted with the Trial of Captain Donellan for the murder of Sir Theodosius Boughton, Bart., by an exhibition of laurel-water with a purgative mixture. The effect was to produce an epileptic fit, and immediate death. Sir Henry saw the face of Sir Theodosius when the corpse was disinterred, and gives his testimony to its particular hue resembling that of "a pickled walnut." He thinks it probable that, considering all the circumstances of the narrative of Tacitus, (Annal. lib. xiii. c. 15,) of the death of Britannicus, that he was poisoned by Nero by means of a similar preparation. "The historian states, that when Nero had determined to despatch the ill-fated youth, he sent for Locusta, a convicted female poisoner, who had been pardoned, and was kept for state purposes. Nero ordered her to prepare a poison which

should produce its effect immediately, in distinction from one of those which should prove fatal at some distant given day; for the notion prevailed then, that poisoners could devise a draught which would operate at any given period. Locusta prepared one which killed a goat after five hours. This would not serve the tyrant's purpose—he ordered her to provide a more speedy instrument, to prepare it in his own chamber, and in his presence. The boiling began, and was urged to the *effectual* moment, in proof of which it was tried on a hog, and the animal was killed by it immediately. Dinner is served; the young members of the imperial family are sitting at the foot of the table. The Emperor and his guests reclining on their sides. The unhappy youth calls for water—the prægustator tastes it, and then serves it. It is too hot; some of it is poured off, and the glass is filled up with a fluid resembling water—but this contains the poison. The young man drinks it, and is seized instantly with an epileptic fit, in which he expires. He is buried the same night." Dio Cassius alludes to the lividness of the face of Britannicus, and he says that Nero was tempted to conceal it by paint, lest it should betray the secret that he had perished by foul means; and Sir Henry seems to suspect that Juvenal makes reference to this remarkable circumstance in his First Satire, in the lines:—

> Instituitque rudes melior Locusta propinquas
> Per famam, et populum *nigros* efferre maritos.

In 1834, he published a paper "On the Education and Conduct of a Physician," in which he ably contends for a classical education, as exhibiting the best models of order and of taste. To the physician Sir Henry looks upon classical knowledge as peculiarly attractive, because he perceives in the ancient historians the origin of many of the terms of his art; the earliest mention of some remedies, whose value has since been confirmed by time and use; and in the poets, the most touching description of the effects of moral causes upon the health of the human system; to say nothing of the pure delight of such sources of innocent amusement as those which are opened in these fountains, and which are so well calculated to heighten the pleasure of future success, and to soften the adversities of possible disappointment. The study of Anatomy, Physiology, Pathology, Botany, Chemistry, Mathematics, Natural Philosophy, &c. is properly insisted on, and their relative importance distinctly marked. Moral qualifications are no less ably descanted upon. The Essay concludes with an appropriate eulogy of Lord Grenville, the late Chancellor of Sir Henry's Alma Mater, whose fondest wishes are justly stated to have been for the

"prosperity of his country; his recreation, literature; and his comfort, religion."

In 1825, Sir Henry printed a paper "On the Deaths of some Eminent Persons of Modern Times," and he relates some curious particulars relative to Henry VIII., Edward VI., Mary, the elder daughter of Henry VIII., Cardinal Wolsey, Oliver Cromwell, Charles II., William III., Dryden, Swift, George I., II., III., IV., and the Duke of Gloucester. Henry VIII., who died of dropsy at the age of fifty-six, was a great dabbler in physic. He not only offered medical advice on all occasions which presented themselves, but he also made up the medicines, and administered them. He therefore combined the three offices of physician, apothecary, and nurse, and a very curious collection of his recipes is preserved in the British Museum. In the last illness of Charles II., (a fit of apoplexy) one of the prescriptions is signed by no less than fourteen physicians, and one of the articles prescribed is "twenty-five drops of the spirit drawn from human skulls!"

At the commencement of the last Session of the Evening Meetings of the College of Physicians, Sir Henry, according to custom, delivered the Introductory Essay, and chose for his subject the "Effects of Cold." It afforded another opportunity of displaying the President's knowledge of classical and general literature. The operation of cold upon the human body is a subject alike extensive, complicated, and difficult. The effects vary according to the degree of cold, the state of the system, and the manner in which it is applied. The diversity is indeed so great, that no little confidence in theoretical reasoning, is necessary to give credit to the possibility of one principle producing such variable results. Sir Henry alluded to many striking incidents, and the loss of human life, connected with the history of Xenophon's memorable retreat, of the effects of cold in the Swedish army, of Napoleon's Expedition to Russia, of the Travels of Banks, Solander, &c. The President coincides with the opinion of some other pathologists, as to death being produced in this case by apoplexy. The records of Greenwich and Chelsea Hospitals serve to demonstrate that the longevity of the soldier exceeds that of the sailor, and this Sir Henry accounts for by reference to their different habits. The sailor is most exposed to the vicissitudes of climate, has to contend with storms and tempests, and is also less prudent when on shore, all of which doubtless tend to abridge the period of his existence.

Sir Henry received from George IV. the honour of Knight Commander of the Guelphic Order, on the day upon which the New College of Physicians was opened, and from King William IV., the further distinction of Grand

Cross of the same Order. He is a Fellow of the Royal and Antiquaries' Societies, and attached to many other literary and scientific institutions. By virtue of his office of President of the Royal College of Physicians, the chair of which he has filled during eighteen years, he is also one of the Trustees of the British Museum. Sir Henry has given evidence on various subjects connected with Medicine before Committees of the Houses of Parliament, of which Reports will be found in the printed Journals.

The extensive practice Sir Henry has for so many years enjoyed, united to his intimate acquaintance with his profession, and the advantages derived from his habits of reading and study, has rendered him a practitioner of great celebrity and success. The writer of this has had frequent opportunities of meeting him in consultation, and it is but justice to say that no one he ever met shewed quicker perception as to the nature of the disease, or more readily seized upon all the principal points of a case. In this respect, as a consulting physician, Sir Henry Halford is of the highest value, and is well appreciated by his professional brethren, who cannot but feel that much also is due to him for shedding a splendour around the College, and labouring very zealously towards placing the members of a liberal profession in that station in society to which their merits, their education, and their utility, justly entitle them. This is a point of no little importance to the profession, the members of which certainly do not hold the rank they merit in a country so advanced in civilization. The difficulties which attend the acquisition of a knowledge of medical science, and the importance of that science to society, have been always admitted. Is the error, then, with the public, or with the profession itself? Does not the fault chiefly rest with its own members? Have they not, by the practice of arts to gain a temporary popularity, and to raise themselves above their brethren, tended to produce this effect, and lessen the estimation of society for the members of a *liberal* profession? There is a want of self-respect, and a want of union among medical practitioners. Why should this be?—Surely no class of men are exposed to greater dangers in the performance of their duties. If malignant diseases spring up, they are never found backward to examine into their nature; heedless of personal security, the abodes of pestilence are visited, and hospitals, crowded with "contagious death," receive their unremitting attention. The vocation of the physician is with the sick and dying; and this he pursues, and must pursue, with serenity and thoughtfulness: his equanimity is never permitted to be disturbed. In the midst of an infectious atmosphere, he is calmly meditating on the horrors which surround him, and devising means for the relief of the diseased, and

those on the confines of death. Even with the dissolution of the patient, his zeal suffers no relaxation: the art of dissection is employed, often at the peril of his own existence, to trace the hidden causes of disease, and thereby to counteract the malady, or afford alleviation to the afflicted. Are these services of little value or consideration? Let them be duly regarded, and then say, in what estimation the medical practitioner deserves to be held in society. Are his toils, his dangers, his merits fully acknowledged?

These observations apply, of course, to the members of the profession as a body; individually, there are exceptions, but they are of great rarity. Sir Henry Halford is deservedly one of these: he is entitled to it by his learning and his liberality. He moves in the first circle, and is in the full enjoyment of intercourse with all ranks of society; and in taking leave of him on this occasion, the writer would fain address him in the language of his favourite Horace, and say,

"Vitâ cedat, uti conviva satur."

Joannes Samuelis Schmid Studiosus Bernas

Halle

Bern 28 Sept 1774

ALBERT DE HALLER, M.D. F.R.S.

"Artis Medicæ decus."

Hippocrates has been styled the "Prince of Physicians." Haller may justly be called the "Prince of Physiologists." No individual, either of ancient or modern times, has equalled him in the extent of his erudition, and the magnitude of his labours. He united to considerable learning and genius, the most laborious industry and patience of observation, and he has thrown numerous lights on the science of physiology, reducing to demonstration that which was before merely conjectural, and placing the foundations of the science on its only true basis—an attentive examination into the intimate structure of the human body, and an observation of the various phænomena "by which we live and move and have our being." There is a limit, however, to all human knowledge, beyond which it is impossible to pass. Of this Haller was most fully sensible. He well knew how ignorant we are, and ever must be, of first causes. The effects of these are apparent to our senses, but their nature and origin are hidden from our view; there is, indeed, an agency beyond all that the scalpel can trace or the microscope detect—truths which reason can never discover, nor the most exalted intelligence adequately comprehend. The Psalmist tells us, "Such knowledge is too wonderful for me; it is high, I cannot attain unto it."

Albert de Haller was born at Berne on the 18th of October, 1708. He was the son of Nicholas de Haller, an Advocate and Chancellor of the County of Baden, a descendant of an ancient patrician family of the city of Berne; and his mother was the daughter of one of the members of the sovereign council of that republic. In early life Albert de Haller displayed much activity of mind and determined perseverance, and gave promise of great genius. It is reported, that when only four years of age he made short exhortations to the domestics of his father's house, on texts of scripture, at the customary family prayers, for Haller's parents were distinguished for their piety. At nine he had composed for his own use a Chaldaic Grammar,

a Hebrew and Greek Lexicon, and a Historical Dictionary containing upwards of 2000 articles extracted from the Dictionaries of Moreri and Bayle. At this time he was called upon to present a piece of writing in the Latin language, to pass to the upper school. Haller presented one in Greek. Such efforts at so premature an age justly excited the fears of his father, who apprehended that his son's eagerness to learn every thing might prove destructive of profound acquirements. He therefore placed him under the tuition of a preceptor; but he was ill adapted to the developement of such a mind as Haller's: a man more distinguished by the persecutions to which he had been subjected on the score of his religious opinions, than by any high mental attainments. He was stern and severe; but these qualities did not destroy the ardour of his pupil, or create a disgust for study. They produced another effect—they excited a desire of revenge, which was exhibited in some Latin verses directed against the teacher, whom he never could see without, it is said, feeling a kind of involuntary terror. At thirteen years of age, Haller lost his father and also his fortune. He had been destined for the church, but now, left to his own choice, he selected medicine. He was placed at a public school, where he gained great distinction for his classical knowledge. He also manifested a taste for poetry, and composed several poems. At fifteen he had written tragedies and comedies, and also an epic poem of 4000 verses, in which he attempted an imitation of Virgil; and upon the house in which he resided being on fire, at the hazard of his life he rescued from the flames those efforts which he then regarded as the most precious of his possessions in the world. One year, however, served to dissipate this illusion, and he committed the papers to the same destructive element from which he had preserved them, and directed his attention to the study of philosophy. He studied under Camerarius and Duvernoy at Tubingen, afterwards at Leyden under Boerhaave in the year 1725. Here he associated with Albinus and Ruysch, and other great men, until his health being impaired, probably by intense application, he was compelled to travel, and went into Lower Germany. Upon his return he took the degree of Doctor of Medicine, and chose for the subject of his thesis a discourse on a pretended discovery of a salivary duct by Coschwitz, which Haller and Duvernoy had shewn by dissections, both of the human and brute species, to have no existence. He visited England in 1727, and became acquainted with Sir Hans Sloane, Cheselden, Douglas, Pringle, &c. After paying a visit to France,* where for a short time he studied under Winslow,

* His stay in Paris was short, owing to an information having been lodged against him for dissecting human bodies, upon which subject the prejudices of the French people were at this time very strong.

Le Dran and Louis Petit, he went to Basle, and attended to mathematics with the celebrated Bernouilli, and here he commenced the study of botany, and laid the plan of his work on the Plants of Switzerland. He returned to Berne in 1730, being then only twenty-two years of age. His poetical genius again manifested itself—but in descriptions of nature, in reflections on mathematics, morals, and all the feelings which exalt and dignify the human character. These were published, and soon translated into French, and gained for their author a deserved celebrity. His devotion to the Muses formed no impediment to the cultivation of philosophy—to severer and more important pursuits. The works he has published sufficiently demonstrate the labour that must have been exercised in anatomical and physiological studies, the observation of disease, &c. These, sufficient in themselves to engage the whole time of any man of ordinary powers, were insufficient for the grasp of Haller's genius—he revelled in the whole domain of literature and science, and there is scarcely a subject within the range of letters in which he has not exhibited some extent of knowledge. No vicissitude of fortune, no change of circumstances, could for a moment divert his mind from the pursuit of learning. Blessed with a most powerfully retentive memory,* he had also the faculty of order; he methodized his acquisitions, and the beneficial results he gave to mankind. To extend his acquaintance with botany, he made several excursions, ascending the highest mountains of Jura and the Alps; he visited also the marshes, and he surveyed the vineyards, in the more temperate parts of his native country.

In 1734 the republic of Berne established a public amphitheatre, and Haller was appointed to teach anatomy. He was also appointed to a hospital, and had the arrangement of the public library and the cabinet of medals. His abilities were soon, however, to be exercised in a wider field. George II. called him to Göttingen, where he was made Professor of Anatomy, Surgery and Botany. He accordingly left his native country, accompanied by his wife, whose tastes are said to have corresponded to those of her husband, with whom she lived in great happiness, and gave to him three children. Haller's health was infirm; travelling with a family was in those days difficult and troublesome, and by an accident in the overturning of the carriage, his wife sustained so severe an injury that she died almost at the instant of her arrival at Göttingen. In a melancholy and dejected state of mind, therefore, did Haller enter upon the performance of

* Of his extraordinary memory an instance has been related of his having enumerated all the sovereigns mentioned in De Guignes's History of China, together with the principal events that occurred during each reign.

his new duties: removed from all his relations and immediate connexions, he sought relief in the objects of his studies, and proved the truth of an observation made by the celebrated Madame de Stael, that "Le meilleur moyen de calmer les troubles de l'esprit n'est pas de combattre l'object qui les cause, mais de lui présenter d'autres, qui le detournent et l'eloignent insensiblement de celui là." He soon acquired great popularity. His attention to his pupils* was unwearied, yet he found time for the composition of those numerous works by which he has been so well known to, and admired by, posterity. Physiology obtained of him the greatest share of his time—and what pursuit so well entitled to such distinction? Anatomy demonstrates the substance, shape, condition and connexion, and relative dependence, of the several parts which enter into the formation of an animal body. Physiology teaches us the adaptation of this structure and those properties to the functions the several parts have to perform, and traces also the influences upon which they depend for their just and proper action. In the prosecution of physiological research, a reference to comparative anatomy is absolutely essential, for by this study many important discoveries have been made, as to the manner in which some of the operations of the animal economy are effected. To merely enumerate the various objects embraced by physiological science, to detail those alone which depend upon an inquiry into the laws of union between the mind and the body, and their mutual influence upon each other, would incur a detail too extensive for this brief memoir, and it can only therefore be remarked, that Haller regarded this science in its most extensive sense, pursued it with the utmost zeal, and gave to the world the first work deserving of the name of a system upon this subject. His experiments are all detailed with great fidelity and simplicity, and his reasonings upon them distinguish the philosopher. Before his time, little beyond speculative hypothesis had been entertained; he gave to physiology the certainty of a physical science, by connecting all the operations of the human frame with the peculiar condition of the structure of the parts upon which their functions were to be dependent. His first work was put forth under the modest title of an "Essay," which, after thirty years' consideration and emendation, was published as "Elementa Physiologiæ Corporis Humani." The value of this work is so universally admitted, that it is unnecessary to say one word upon its merits; it will ever remain a monument of the industry, research, and genius of its author, and never be consulted by the student, or inquirer into nature, without profit and satisfaction. The numerous errors he corrected, the opinions be pro-

* Of this number were Zinn, Zimmerman, and Caldani.

mulgated, and the discoveries he announced, involved him, as may readily be conceived, in various controversies. In all of these he conducted himself with the calmness, and dignity, and firmness becoming a great natural philosopher. He defended his opinions with distinguished ability and candour. They had chiefly been based upon experiments made on living animals, and had reference to his doctrines upon Irritability and Sensibility.

To a mind like that of Haller's, deeply impressed with the truths of religion and the doctrines of Christianity, it is reasonable to suppose that the performance of these experiments gave rise to much remorse and distress. This is apparent in various parts of his writings, where may be found constant apologies for seeming cruelty, on the ground of their benefit to mankind. Upon the subject of the performance of experiments upon living animals, much has of late been said; and from one extreme we are almost likely to run into the opposite, as in most cases.* Happily, however, for physiology, its greatest lights are to be derived from the observation of pathological phænomena, or those appearances which present themselves under disease of parts or disordered function. Science and humanity are in this instance therefore not opposed to or inconsistent with each other. Haller possessed a great faculty of order, and this in the study of botany was found to be of the most essential importance. He, however, looked upon the establishment of an order in no other light than that of an auxiliary to the attainment of real knowledge of the subject. His object was to discover the most natural mode of the arrangement of plants, and his system will therefore be found to partake of the characters of those of Linnæus, Jussieu, and Tournefort, from all of whom he derived assistance. The system of Linnæus was founded upon the sexual character of the plants, that of Jussieu upon the situation of parts. Haller obtained from these celebrated naturalists, and from Tournefort, various divisions, and made choice of a system founded upon the mutual relation subsisting between

* No one would more strongly reprobate the performance of unnecessary experiments upon living animals than the writer of this sketch; but when made by men whose names are a sufficient guarantee for their usefulness, (and among those who have chiefly made vivisections are Harvey, Haller, Spallanzani, Hunter, Parry, Haighton, Cooper, Bell, Brodie, Blundell, Hall, &c.) and to elucidate difficulties in Physiology, Pathology, and the operation of medicines upon the human body, they cannot but be regarded as justifiable, nay, even most laudable. Much light has been derived from experiments performed by those whose names have been referred to; and in the consequent improvement of medical science, an alleviation of human misery effected.

the number of stamina and that of the petals; and in the monopetalous plants, between the number of stamina and the divisions of the calyx. All artificial systems must necessarily be liable to objections, and but few botanists have been found to embrace the method of Haller. His description of plants, and the faithful manner in which they have been figured, have been universally admired. No less than 2486 species of plants are described in his "Historia Stirpium Indigenarum Helvetiæ."

His disposition to methodize and to condense the knowledge already obtained upon various subjects of science, induced him to plan the composition of four kinds of Bibliotheca relating to Anatomy, Botany, Surgery, and Medicine. These display the extent of Haller's reading and the strength of his judgment; for not only do they contain extracts from the several authors whose opinions are detailed, but they give also his own estimation of the value or imperfections of them, and point out in what degree they are to be considered as fitted to be the guide of the student. As these opinions had reference both to dead and living authors, the publication rendered Haller liable to much censure and abuse. He had set up as a censor upon all that others had done; and the high opinion generally entertained of the talents of Haller, and the reputation in which they were held, may be well estimated by the boldness of this undertaking. No less than 52,000 works are noticed in the Bibliothecæ.

Haller associated himself with a small number of persons connected with the Royal Society of Göttingen, who at an early period undertook to publish reviews of the various publications that appeared. Some of the best articles of this kind were furnished by Haller; and relate not merely to medical and botanical sciences, but extend to various branches of history and letters, and mark the erudition, judgment, and fancy of their author. He is said to have written 1,500 articles for this publication. He procured translations of several works into the German language, and wrote prefaces to such as he deemed worthy of peculiar notice. He was anxious to promote the prosperity of the University of Göttingen; and principally by his influence were established a school for surgery, an academy of sciences, a lying-in hospital, a museum of anatomy, a botanic garden, and a school for design, where the pupils were taught to delineate all the objects of natural history. He prevailed on the regency of Göttingen to build a reformed church for the Protestant professors and students of the university, and he superintended its erection. All undertakings for the advancement of science or the public good, had his zealous support and assistance; and the numerous services he had rendered the city of Göttingen, procured for him an honourable distinction from His

Britannic Majesty, who obtained for him the rank of a Noble of the Empire from the Imperial Chancellor. This honour he, however, declined, as in his native country, Switzerland, it would have been considered a badge of vanity, and an odious distinction: he has, nevertheless, generally been designated by the title of "Baron Haller."

Upon the death of Dillenius, Haller was invited to Oxford, to succeed to the Professorship of Botany; and this offer is said to have been made, at the particular request of Dillenius, when upon his death-bed. The love of country, ever so remarkable in the Swiss, prevented him from yielding to this solicitation, as well as to others that had been urged by the King of Prussia, the States of Holland, &c.; for the estimation in which he was held by his contemporaries abroad seems to have been uncommonly great. The labours in which he had been engaged at Göttingen during seventeen years now began sensibly to affect his health, and he resolved upon returning to his native country, where his talents and character were so well appreciated as to have caused him to have been elected one of the members of the sovereign council. This honour was conferred upon him in 1745; but he left Göttingen early in 1753, in which year a place fell to him by lot, by which he acquired a voice in the election of the magistrates of Berne. Men profoundly versed in natural philosophy and the sciences, have not been very remarkable in the performance of civil duties; yet there are some situations, in which they are capable of rendering very essential service to a community; and such proved to be the case with respect to Haller, for he brought to great perfection the administration of the salt-works, and thereby considerably increased the revenue. The different establishments for education received his attention, and he devised the plan of a school for the education of the opulent citizens, to qualify them to fill the principal offices of the republic. He was the president and promoter of the Economical Society of Berne. He benefited the condition of the pastors of the Pays de Vaud; and as one of the members of the Board of Health, he opposed the pretensions of ignorant empirics. His fellow-citizens engaged him in the performance of several duties of great importance to the state, and his conduct fully justified the confidence they had reposed in him. He drew up a regular system of political economy, and published it in the form of a romance, under the title of "Usong."

In the midst of these duties he did not entirely abandon his former pursuits: physiological speculations and inquiries still continued to engage his attention: he further arranged many of his works, and contributed several papers to the transactions of public academies, composed in the

German, Latin, Italian, French, and English languages. Botany retained all its interest in his advanced years; and he made frequent excursions into the neighbouring mountains, by which he perfected his work on the plants indigenous to Switzerland.

He was appointed perpetual President of the Academy of Göttingen; and he was earnestly solicited to accept of the Chancellorship of the University, vacant by the death of M. de Mosheim. The sovereign council of Berne, in order to retain him among them, and to continue to derive improvement from his exertions, settled upon him a pension for life; and the office of Chancellor, though made by his Britannic Majesty, was declined. He refused also the Chancellorship of the University of Halle, offered to him by the King of Prussia, and also a lucrative appointment at Petersburgh. Foreign countries appear to have been alike anxious to gain his services, and to bestow upon him various honours. Gustavus III., King of Sweden, made him a Knight of the Polar Star. He was one of the eight foreigners elected into the Academy of Sciences of Paris, and he was chosen a Fellow of the Royal Society of London. A great number of other institutions enrolled him in the list of their associates. His fame was universal: no person of rank or scientific eminence visited Switzerland without paying their respects to Haller; and on one occasion he received Joseph II., Emperor of Germany.

In the midst of all this glory, the fruit of ardent study and great abilities, his frame, naturally delicate, began to decay. Attacks of gout were succeeded by an inflammatory affection of the bladder, which subjected him to pain, and rendered necessary very large doses of opium. By this means his intense sufferings were calmed, and he was not precluded the possibility of making some portion of mental exertion, for at the very close of his life he continued to enjoy the society of his friends, and was engaged in making additions and improvements to his works. A life spent in the study of nature, in promoting the advancement of science, in ameliorating the condition of mankind, and improving and refining the morals, was likely to be closed with serenity and resignation. Religious truths had made a deep impression upon the mind of Haller, and throughout life he was remarkable for his piety. He therefore looked forward to his removal from this world without anxiety or distress. His friend and physician, Rosselot, attended him at the last, and did not disguise from Haller his real situation. The patient exhibited such extraordinary fortitude under this most trying of all situations, that, feeling his pulse from time to time, he said to his friend with great composure, "the artery no longer beats," and immediately he expired. This occurred on the 12th Dec. 1777, in his 70th year. In this year died

also Linnæus and Jussieu, Voltaire and Rousseau. Science and literature have rarely lost such splendid ornaments in so short a period of time.

Haller was three times married. The death of his first wife has been already noticed. Two years after that event he married again, and lost his wife in childbed. By his third marriage he enjoyed much happiness, and had eleven children. At the time of his death were living four sons and four daughters, all of whom were established in life.* Haller presents to us the picture of what we could wish all philosophers and men of science to be: "his soul was gentle, and his heart replete with sensibility." His whole career was one of incessant application; neither sickness nor sorrow, however it might check, could stop its progress. His correspondence was most extensive—all the principal literati and distinguished men of science of his day held communications with him. He collected a most extensive library, consisting of nearly 20,000 volumes, on Anatomy, Surgery, Medicine, Botany, and Natural History. He formed also Herbaria, made Diaries, and left behind him nearly 150 MSS. all written in his own hand (a very minute character,) and the whole of these, together with the library, were purchased by the Emperor Joseph, and given to the University of Pavia.

The person of Haller is described as tall and majestic, and of a serious and expressive countenance. He had at times an open smile, always a pleasing tone of voice, usually low, and seldom elevated even when he was most excited. He was fond of unbending himself in society, and was on these occasions remarkably cheerful, polite, and attentive; he was free of pedantry, and would converse with the ladies on fashions, modes of dress, and other trifles, with as much ease as if always accustomed to intercourse with general society.

It remains only to add a list of the works of Haller, which may be thus arranged:—

1. Diss. Inaug. de Ductibus Salivalibus novis. Tubing. 1725. 4to.
2. Poem on the Alps. Lond. 1729. Also in German, (22 editions!) French, Italian, and Latin. Berne. 1795. 4to.†
3. De Musculis Diaphragmatis. Bernæ, 1733. 4to.
4. Comment. ad Herm. Boerhaave Prælect. Acad. 1739-44. 7 vols. 8vo.
5. Iter Helveticum et Iter Hercynicum, Gött. 1740. 4to.
6. Hippocratis Opera Genuina. 1740. 2 vols. 8vo.
7. Icones Anatomicæ Corp. Human. Gött. 1743-56. fol

* Haller offers an instance in contradiction of the assertion of Lord Bacon, that "the best works, and of greatest merit for the public, have proceeded from the unmarried or childless men."

† Prince Radzivil, the commander of the Polish Confederates, was so delighted with this work, that he sent the author a brevet of Major-General in his army! Haller has been looked upon as the father of the new school of German poetry.

8. Enumeratio Method. Stirpium Helvet. Indig. Götting. 1742. 2 tom. fol. and 1768, 3 vols. fol.

9. Hist. Morborum, qui an. 1699, 1700, 1701 et 1702, Vratislaviæ grassati sunt. Lausan. 1746. 4to.

10. Primæ Lineæ Physiologiæ. 1747, 8vo. Edinb. 1767. Translations in 1754, 1778, 1785, 1801, &c.

11. Opuscula Botanica. Götting. 1749. 8vo.

12. Poesies, Germ. Franc. Zurich. 1750. 8vo. Translated into English. Lond. 1790-94.

13. Disputationes Anatomicæ Selectæ. Götting. 1746-51. 8 vols. 4to.

14. Methodus Studii Medici. Amst. 1751. This is the work of Boerhaave, but there are very considerable additions by Haller.

15. Opuscula Anatomica de Respiratione, &c. Gött. 1751. 8vo.

16. Dissertation sur les parties sensibles et irritables des Animaux. Laus. 1752. 12mo.; and Lond. 1755. 8vo.

17. Mémoires sur la Nature sensible et irritable des parties du Corps Animal. Laus. 1756. 4 vols. 12mo.

18. Physiology; being a Course of Lectures upon Visceral Anatomy, &c. Lond. 1753. 2 vols. 8vo. A Translation by Dr. S. Mihles.

19. Opuscula Pathologica. Laus. 1755. 8vo.

20. Letters concerning several late Attempts of Free Thinkers, yet living, against Revelation. (In German.) 1755.

21. Disputat. Chirurgicæ Selectæ. Laus. 1755-6. 5 vols. 4to.

22. Deux Mémoires sur le Mouvement du Sang, &c. 1756. Translated into English. Lond. 1757. 8vo.

23. Pathological Observations. Lond. 1756. 8vo.

24. Disputat. Medicæ ad Morbor. Hist. et Curat. Laus. 1757-68. 7 vols. 4to.

25. Elementa Physiologiæ Corporis Humani. Lausan. 1757-66. 8 vols. 4to.

26. Deux Mémoires sur la Formation du Cœur dans le Poulet, sur l'Oeil, sur la Structure du Jaune, &c. Lausan. 1758. 2 tom, 12mo.

27. Medical, Chirurgical, and Anatomical Cases and Experiments, communicated to the Royal Academy of Sciences at Stockholm. Lond. 1758. 8vo.

28. De Variolis, Apoplexia, et Hydrope. Laus. 1761. 12mo.

29. Opera Anatomico-Minora. Laus. 1762-68. 3 vols. 4to.

30, Bibliotheca Botanica. Lond. 1771-2. 2 tom. 4to.

31. Usong; an Eastern Narrative. (In German.) Lond. 1772. 2 vols. 12mo.

32. La Génération. Paris. 1774. 2 tom. 8vo.

33. Bibliotheca Anatomica. Tiguri. 1774-7. 2 tom. 4to.; and Lond. 1774-6.

34. Bibliotheca Chirurgica. Berne, 1774-75. 4 vols. 4to.

35. Bibliotheca Medicinæ Practicæ. Basil. 1776-88. 4 vols. 4to.

36. Letters to his Daughter on the Truth of the Christian Religion. Translated from the German. Lond. 1780. 8vo.

37. Of a Steatomatous Tumour of the Ovarium. Phil. Trans. 1744.—38. Of a Schirrosity of the Cerebellum. Ib.—39. On a Contracted Vena Cava; on a Sinus of the Aorta. Ib.—40. Histories of Mislaid Structure, observed in Dead Bodies. Ib.—41. Experiments on Respiration. Ib. 1750.—42. Of the Course or Passages of the Semen. Ib.

43. Anatomia Cadaveris Virilis. Gött. 2 tom. fol. 1781.

Thōms Linacrus Medicus

THOMAS LINACRE, M.D.

FIRST PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS.

"Nomen in exemplum sero servabimus ævo."—MILTON.

DR. THOMAS LINACRE (or as his name has been frequently written, Lynacer, Lynaker, Lynakre,) was born at Canterbury, in the year 1460. He was the descendant of an ancient family, mentioned by Fuller and Ward as the Linacres of Linacre Hall, in the parish of Chesterfield, in Derbyshire; whence has arisen the error of Hollingshed and others, who have stated him to have been born in the town of Derby. He received his education under William Tilly of Selling, at the King's School at Canterbury, whence in 1480 he was sent to Oxford, and elected a Fellow of All Souls' College, in 1484. He was much distinguished by his learning; to increase which, however, he travelled into Italy, accompanying his former teacher, who had been appointed on an embassy to Rome by Henry VII. Linacre lost no opportunity of acquiring knowledge; and being at Florence, he was introduced to, and became a great favourite of, the celebrated Lorenzo de Medicis, the greatest patron of letters of his age, and with the preceptors of the sons of Lorenzo he had the advantage of pursuing his studies. He read Greek with Demetrius Chalcondylas, a native of Greece, the author of a Greek Grammar, which is remarkable as being the first book printed with Greek characters. This scholar had fled from his native country, and with other learned men taken refuge in Italy, upon the capture of Constantinople by the Turks. Linacre profited also by instruction in the Latin from Agnolo Politiano. With such advantages it is not surprising that he should have excelled in his knowledge of the dead languages, and that his style should be marked by great elegance. Having made those acquisitions, he travelled to Rome, and there studied natural philosophy and physic under Hermolaus Barbarus, by whose influence he enjoyed opportunities of consulting the precious manuscripts preserved in the library of the Vatican. Thus fully imbued with classical learning and natural knowledge, and having taken a degree of Doctor of Medicine at Padua, Linacre returned to England, incorporated and settled at Oxford, at the University of which he read

lectures upon medicine. He was not long, however, permitted to remain in this place; for Henry VII. commanded him to his Court in 1501, and appointed him physician and preceptor to his son, the Prince Arthur, and he was subsequently made physician to the King himself, and also to his successor, Henry VIII., and to the Princess Mary. The honours paid to his extended learning probably induced him to abandon physic, and turn his attention to divinity; for we find that in the latter part of his life he was applying himself with great diligence to this study, and that he entered the priesthood, and obtained the rectory of Mersham, 23d October, 1509. This he held only for a month, being installed into the prebend of Eaton in the cathedral of Wells, and in 1518 to another of York. He also held other preferments in the church, which were conferred upon him by Archbishop Warham. His reasons for entering the church have never been detailed. Whether the infirmity under which he laboured, and which ultimately occasioned his death, incapacitated him from pursuing the active duties of his profession, or whether higher motives operated, we know not; but Sir John Cheke has recorded, that only a little before his death, when worn out with fatigue and sickness, he began to read the New Testament, and that upon perusing the 5th, 6th, and 7th chapters of St. Matthew, containing Christ's Sermon on the Mount, he threw the book from him with great violence, passionately exclaiming, "Either this is not the Gospel, or we are not Christians." Sir John Cheke gives a character of Linacre in his Treatise "De Pronunciatione Græcæ Linguæ." Linacre continued in the church until his decease, which took place on the 20th or 21st October, 1524, having suffered considerable torment from the disease of stone in the bladder. He was honoured with entombment in the Cathedral of St. Paul, where, in 1557, a handsome monument was erected to his memory, with the following elegant inscription by Dr. Caius, the founder of the college of that name in the University of Cambridge:—

Thomas Lynacrus, Regis Henrici viii. Medicus; Vir et Græcè et Latinè, atque in Re Medicâ longè eruditissimus; multos ætate suâ languentes, et qui jam animam desponderant, Vitæ restituit. Multa Galeni Opera in Latinam Linguam, mirâ et singulari facundiâ vertit: Egregium opus de emendatâ structurâ Latini sermonis, Amicorum rogatu, paulò antè mortem edidit. Medicinæ Studiosis Oxoniæ publicas Lectiones duas, Cantabrigiæ unam, in perpetuum stabilivit. In hâc Urbe Collegium Medicorum fieri suâ industriâ curavit, cujus et Præsidens proximus electus est. Fraudes, dolosque mirè perosus; fidus amicis; omnibus ordinibus juxta clarus: aliquot annos antequam obierat Presbyter factus. Plenus annis ex hâc vitâ migravit, multùm desideratus, Anno Domini 1524, die 20 Octobris. Vivit post Funera Virtus.

THOMÆ LYNACRO CLARISSIMO MEDICO JOHANNES CAIUS posuit Anno 1557.

This inscription records the estimation in which his learning and abilities were generally held, and the regard entertained for his honourable and virtuous conduct. Fuller says, "It is questionable whether he was a better Latinist or Grecian, a better grammarian or physician, a better scholar or man, for his moral deportment;" and Freind, a no less competent authority, calls him, "the most accomplished scholar of the age." He states him to have been reckoned, by the best judges, as a man of bright genius and a clear understanding, as well as unusual knowledge in different parts of learning. His style, in Latin, has by some been held to be superior to that of his teacher, Poliziano; but Erasmus thought it too elaborate. Freind says he followed the style of the Epistles and Philosophical Works of Cicero, and endeavoured to express the "elegancy of Terence" and the "neatness of Celsus." Linacre, we are told in Jortin's Life of Erasmus, was so accurate, and so superstitiously exact in his compositions, and found it so difficult to satisfy himself, that he had like to have published nothing; which made Erasmus press him earnestly to communicate his labours to the public during his life-time; lest a reserve, which had its origin in caution and modesty, might be attributed to the worse motives of selfishness and ill nature.

Linacre is probably the first Englishman who manifested much acquaintance with the writings of Aristotle; and, in conjunction with John Colet, William Lily, William Grocyn, and William Latimer, in 1497, revived the learning of the ancients in this country. Linacre was the first teacher of the Greek tongue at Oxford; and Grocyn was also devoted to the same in the time of Erasmus. At this period no chair for teaching the finest language of antiquity had been established at this university. It is asserted, that upon the recommendation of Hermalao Barbaro, Linacre, Grocyn, and Latimer undertook a translation of the works of Aristotle, but they never accomplished it. Sir Thomas More was one of Linacre's pupils.

Let us now see more especially the character of his labours to promote medical science. His professional talent does not appear, so much as his classical attainments, and knowledge of general literature, to have procured for him the patronage of the Court; yet there is no reason to doubt that his judgment in medicine was highly esteemed. Among his patients were Sir R. Bray, the Lord High Treasurer, Cardinal Wolsey, Archbishop Warham, the Bishop of Winchester, &c. Caius gives testimony to his ability to practise; and his prognostic, as to the fate of his friend Lily the grammarian, in submitting to the removal of a malignant tumour of the hip, is upon record. Erasmus often consulted him on account of his frequent indispositions, which came early upon him; and, when he was sick at Paris,

he laments that he had no Linacre to assist him and prescribe for him. "Is aught more acute, more exalted, or more refined than the judgment of Linacre?" says this celebrated man. Linacre founded two lectureships of physic in Oxford, and one at Cambridge; upon which Fuller quaintly remarks, "dutifully his respect to his *mother*, *double* above his *aunt*." The former were given to Merton College, where more attention was paid to physic than at the other colleges, and the latter to St. John's; and the duty imposed upon the lecturers was to explain Hippocrates and Galen to the students. This is of itself sufficient evidence of the interest felt by Linacre to advance the medical profession; but it is further manifested by an act which will be held in perpetual remembrance—the establishment of the Royal College of Physicians of London. His enlightened mind viewed with distress the condition of the practice of physic in his day. By no legal restraint was its exercise restricted to competent practitioners. He saw it engrossed by illiterate persons, chiefly monks and empirics, whose impositions upon the public were practised with impunity. The words of the charter of the college run thus:—"Before this period, a great multitude of ignorant persons, of whom the greater part had no insight into physic, nor in any other kind of learning; some could not even read the letters on the book, so far forth, that common artificers, as smiths, weavers, and women, boldly and accustomably took upon them great cures, to the high displeasure of God, great infamy of the faculty, and the grievous hurt, damage, and destruction of many of the king's liege people." Previously to the establishment of the College of Physicians, the power of granting authority to practise was vested in the Bishop of London, or the Dean of St. Paul's, for the London district, and by the respective bishops of the other dioceses; persons who could not, by their education, be able to form a correct opinion of the qualifications necessary in a medical practitioner. To place the admission of efficient persons to practise in competent hands, Linacre proposed to establish a College or Corporate Society of Physicians, who should, alone, be entitled to the privilege of admitting all persons whatever to the practice of physic, as well as to the supervising of all prescriptions, and the examination of drugs. Linacre employed his interest with Cardinal Wolsey to procure Letters Patent, in 1518, from Henry VIII.; and these being confirmed by the Parliament, the Royal College of Physicians was founded. The munificence of the crown was confined to the grant of the letters patent; the expenses and provisions for the College were to be defrayed out of his own means, or those who were associated with him in its foundation. The constitution of the College expressly provided for the examination of the candidates intending to practise,

by the President and three of the Elects, who have power to grant letters testimonial to the qualified, unless they should be graduates of the Universities of Oxford or Cambridge, and who, by that degree, already possessed a right to practise all over England, except within seven miles of London, without taking any license out from the bishop. The ordinances and statutes which the College has been empowered to establish, have, doubtless, tended to elevate the character of the profession, to ensure to the public the attendance of those whose learning and course of study have qualified them for the treatment of disease, and to the suppression of quackery and the impositions of the wicked and ignorant. Linacre was appointed the FIRST PRESIDENT of the College; and he retained the office for the remainder of his life, a period of nearly seven years. The meetings were held at his house, No. 5, Knight Rider Street, Doctor's Commons (known by the name of the Stone House), which, it is said, he bequeathed to the College. The arms of the College are to this day affixed upon the house, and are placed between the two centre windows of the first floor. They were obtained Sept. 20, 1546—Christopher Barker, Garter King at Arms—and consist of, Sable, a hand proper, vested argent, issuant out of clouds in chief of the second, rayonée, Or, feeling the pulse of an arm in fesse, proper, issuant from the sinister side of the shield, vested argent; in base a pomegranate between five demi-fleurs-de-lis bordering the edge of the escutcheon, Or.

Linacre published several works, mathematical, philological, and medical.

1. Spheræ Procli, cum Astronomicis, Venet. apud Aldum. 1499. fol. This translation was dedicated to his pupil, the Prince Arthur.

2. De Emendata Structura Latini Sermonis, lib. vi. Lond 1524. 4to. This work was not published until after the author's death, and was recommended by Melancthon. Many additions have appeared: Basil, 1530; Paris, 1532; Leipsic, 1545. Lutetiæ apud R. Steph. 1550. Venet. apud Ald. 1557.

3. Rudimenta Grammatices. This Latin Grammar was composed for his pupil, the Princess Mary, to whom it is dedicated; and in the preface he says, "that having been appointed by the King to take care of the health of the Princess, and not being able, on account of his own increasing infirmities, to perform the duties of a physician, he bethought himself how he could be of the most use to his illustrious charge. He saw in the Princess a most favourable disposition towards the cultivation of letters, and he therefore devoted himself to the perfection of this treatise on the Rudiments of the Latin Grammar, which might aid her Highness in her studies." This work was translated into Latin by Buchanan; and printed at Paris in 1533, and again in 1546.

The medical works consist of translations from Galen; of which Fuller says, "By his endeavours, Galen speaks better Latine in the translation,

than he did Greek in the original;" and Erasmus bears a similar testimony They consist of,

1. De Sanitate tuenda. Parisiis. 1517. This work is dedicated to Henry VIII. A presentation copy to Cardinal Wolsey, printed on vellum, of great beauty, is preserved in the British Museum. The arms of the Cardinal are emblazoned and illuminated at the top, and those of Henry VIII. at the bottom, of the title page. A Latin epistle (from which the Autograph accompanying the Portrait of Linacre is taken,) is inserted in this volume; and the following translation of it may be interesting to the medical reader, as it relates to the writings of Galen:—

"To the Reverend Father and Lord in Christ, the Lord Thomas, by Divine providence Priest Cardinal of St. Cecilia, Archbishop of York, Legate of the Apostolic See to England, Primate and Chancellor; Thomas Linacre, physician, presents his dutiful respects.

"I send you, most reverend Father, a copy of my Works, which I lately dedicated to our most illustrious Prince; in order that I may consult your health also as well as his. In so doing, I think that I have the best justification: since you so consult his tranquillity and security, (which not to do would be indeed most unworthy) that no cares of state can effect his health. I wish that your immense occupations would allow you to read through these treatises! You would find, (unless a too great partiality for my own work deceives me) much that would be to your taste; for out of your singular condition, you do not immediately admit every thing, but only that which is recommended by sound reason. Here, there is nothing (as they say) spoken "gratis;" but every thing either discovered by sure experiment, or asserted upon the strongest reasonings, so that not one of these things has been refuted for nearly 1300 years! for so long is it since the age of their author. But whether you read them yourself, and weigh them with your very accurate judgment, or whether he reads them to you, whose duty it is to watch day and night over your health; it will be easily discovered by using what things, and from what abstaining, you will not only be most free from diseases, but even put off old age to the remotest period.—Which alone is a sufficient reward of my labour.

"By these six Commentaries will be understood the whole *rationale* of the diet of the ancients. Of which, if any one shall the less approve, because forsooth it differs from our own, he ought to remember that it has been established by the calculation of those whose wisdom, to this day, in many other concerns of life, cannot be admired too highly. Wherefore we ought the more to suspect our present practice for the very reason that it does not agree with that (of the ancients.) Farewell."

2. Methodis Medendi vel de Morbis Curandis, lib. xiv. Paris, 1519. The presentation copies of this work, belonging to Henry VIII. and Cardinal Wolsey, and printed on vellum, are in the library of the British Museum. To these are affixed Latin Epistles.

3. De Temperamentis et de Inæquali intemperie, lib. iii. Cantab. 1521. This is inscribed to Pope Leo X., with whom Linacre had studied Latin under Politian.

4. De Pulsuum Usu. Lond. 1522. Reprinted by Colbinæus, 1528, with the four books De Morborum Symptomatibus. It was dedicated to Cardinal Wolsey, as a New Year's Gift, with wishes for his prosperity and happiness, and with the hope that the work, whose brevity was little proportioned to the importance and ingenuity of its argument, might prove acceptable to him, whose mind was bent on the promotion of learning, and who supplied the place of parent to those who professed it.

5. De Naturalibus Facultatibus, lib iii. Lond. 1523. This was dedicated to his friend and patron, the Archbishop Warham.

6. De Symptomatum differentiis, lib. i. De Symptomatum Causis, lib. iii. Lond. 1524.

Some of these pieces are of great rarity. Linacre's intimate acquaintance with the Greek language well qualified him to translate Galen into Latin.

Mead.

RICHARD MEAD, M.D. F.R.S.

"Non sibi sed Toti."

In the life of Radcliffe, I have already noticed his great attachment to, and recommendation of, Mead; but no two physicians were ever, in character, more opposed to each other, except in one point—that of professional penetration. Radcliffe was blunt, coarse, and violent; Mead polite, polished, and refined. Radcliffe disregarded letters; Mead cultivated them. The elegance of Mead's manners, and his modesty, won, however, upon the rude nature of Radcliffe, and he determined to promote the interests of a highly accomplished scholar. Whatever were the learning and talents of Mead, and they were such as justly to entitle him to all the distinction he enjoyed, there is no doubt that the sanction of Radcliffe, whose practical knowledge was esteemed equal to, if not beyond, its real merits, contributed materially to advance his fortune and fame.

Mead was descended from a distinguished family in Buckinghamshire, and was born at Stepney, August 2, 1673, being one of a family of fifteen children. His father, Matthew Mead, was a nonconformist divine, and possessed, during the presbyterian power, the cure of the new chapel at Shadwell; from which, however, he was ejected, the second year after the restoration of Charles II. He found a retreat in Holland, and, upon a temporary liberty being granted to the dissenters, he returned, and in 1674 the spacious meeting-house at Stepney was erected for him, and the four large pillars of it were presented by the States of Holland. He was accused, in 1683, of being concerned in the Rye-House Plot; but he satisfactorily vindicated himself in the presence of Charles II., who ordered him to be discharged. He published various sermons.

Richard Mead was the seventh child, and he received his education from his father, assisted by Mr. John Nesbitt, in his own house, for the fortune of Matthew Mead was sufficient to enable him to keep a tutor to assist in the education of his children. Latin, it is said, was taught to him

"rather by practice than by rules." In 1688, Mead was placed under the tuition of Mr. Thomas Singleton, and in the following year he studied under the celebrated Grævius, at Utrecht. Medicine being selected for the profession of Mead, he removed to Leyden in 1692, and attended the lectures of Herman on botany, and of Pitcairn on the theory and practice of physic. Mead's diligence recommended him to the notice of the latter professor, who was not remarkable for conveying instruction to his pupils beyond that of the regular academical courses. He was, however, attached to Mead, and maintained a correspondence with him upon various professional subjects, as will be seen by a reference to the works of Mead. Having completed his course of study at Leyden, where he became acquainted with Boerhaave, and with whom he ever after enjoyed an intimacy, Mead travelled into Italy, in company with his elder brother, Nathaniel, (who distinguished himself by his legal knowledge,) Mr. David Polhill, and Dr. Thomas Pellet, who was president of the College of Physicians in 1739. He took a degree in philosophy and medicine at Padua in August, 1695, which was recognized by the University of Oxford, December 4, 1707, granting by diploma the degree of M.D. to him. He visited Naples, Rome, and Florence. At the latter place he made inquiries for the Tabula Isiaca, and, having gained permission to make search for it, he was so fortunate as to find it in a lumber-room, buried in dust and rubbish.

In 1696 he returned to England, and settled in the house in which he was born, (Worcester House,) at Stepney, and continued to practise there during seven years with great success. His reputation must have been considerable, for in 1703 he was chosen Physician to St. Thomas's Hospital; in 1704 he was elected a Fellow of the Royal Society; in 1706 placed upon the council; and in 1717 appointed by Sir Isaac Newton one of the vice-presidents. Upon his election to St. Thomas's Hospital, he removed to Crutched Friars, where he resided for seven years; thence he went to Austin Friars, and upon the death of Radcliffe, he inhabited the house of that physician in Bloomsbury-square, upon which he resigned the hospital. He afterwards removed to a spacious mansion in Great Ormond-street, where his museum was formed and arranged, and where were to be found assembled all the literati of this and other countries visiting England. He was admitted a Fellow of the College of Physicians April 9, 1716; was censor in 1716, 1719, and 1724; and declined the Presidency, which was offered to him in 1744. He read lectures on anatomy to the Corporation of Surgeons, at their hall, for several years. He was consulted in the last illness of Queen Anne, saw the extreme danger of the case, and justly predicted her dissolution. In 1727, on the accession of George II., he was

appointed Physician in Ordinary, and Dr. (afterwards Sir Edward) Wilmot and Dr. F. Nicholls, his sons-in-law, were subsequently associated with him.

The works of Mead are numerous, and they were published in the following order:—

1. *A Mechanical Account of Poisons.* This appeared in 1702. His researches were made many years prior to their publication, and the work went through a great number of editions in London, Dublin, Amsterdam, Leyden, Francfort, Gottingen, Naples, &c., and in various languages. He gives an account of animal, vegetable, and mineral poisons. His opinions underwent considerable change upon this subject, and he had the candour to acknowledge this to its fullest extent, so that the edition of 1747 may be regarded as a new work. He conceived it possible to account for the operation of poisons upon mechanical views, by their admixture with the blood: but of the insufficiency of this explanation he became satisfied; regards his early experiments as having been too precipitately made, and not warranting the conclusions he had drawn from them; in short, he subverts his former hypothesis, and concludes, from the rapidity with which poison can be conveyed into the system, that it must be through no other medium than that of the "animal spirits." Whatever may have been the value of his researches, they show him to have been an ardent experimenter, a man zealous in the prosecution of physiological experiments, and fearless of danger. His description of the various experiments he made upon vipers, the collection of their poison, his tasting it, &c., manifest a most determined spirit of inquiry, and promoted, too, in an age in which few were to be found of a similar character or description.

2. *A Treatise concerning the Influence of the Sun and Moon upon Human Bodies, and the Diseases thereby produced.* At the time this work was published, the Newtonian philosophy was but imperfectly understood. The book, however, contains many observations of importance in the practice of medicine. The character of the work may be judged of from a quotation from Plato which appears in the advertisement: "Let none unskilled in Geometry enter here." Editions were published at London, Amsterdam, Leyden, Francfort, and Naples.

3. *A Discourse on the Plague.* From the dedication affixed to this work, it appears to have been composed by the instruction of Mr. Craggs, one of the secretaries of state, and arose from fears entertained for the public safety, lest the disease then so prevalent and so fatal at Marseilles should reach this country. The question as to contagion was as strongly agitated then as it has been in later times. Mead regarded the plague as contagious, and a quarantine was established. The work was, in the first

instance, in 1720, only "A Short Discourse concerning Pestilential Contagion, and the Methods to be used to Prevent it;" being a manual of directions to be observed in the event of such a visitation. The anxiety felt upon the subject, and the importance attached to Mead's opinions, may be estimated by the fact, that no less than seven editions of his work were published in one year. It was printed in English, Latin, French, and German.

In 1723, Mead was chosen to deliver,

4. *The Harveian Oration* at the College of Physicians, and it was published the following year. He endeavoured in this oration to remove the obloquy thought to be reflected upon the profession by those who maintained the practice of physic at Rome to have been confined to slaves or freed-men, and not deemed worthy of an old Roman. In this oration, Mead shows that the profession had been exercised by the members of several distinguished Roman families. He appended a Dissertation upon some coins struck by the Smyrneans in honour of physicians. Dr. Conyers Middleton replied to Mead, and excited the displeasure of the medical profession by his tract, "De Medicorum apud Veteres Romanos degentium conditione Dissertatio," the tendency of which was to degrade the character of the profession. Dr. John Ward, professor of rhetoric in Gresham College, espoused Mead's cause, and a warm controversy ensued. Middleton replied, but seemed rather anxious to withdraw from, than to pursue the subject, and he and Mead afterwards became good friends.

5. Mead's *Discourse on the Small-Pox and Measles*, although written and arranged many years prior to its publication, did not make its appearance until 1747. The preface to his work sufficiently explains its history. In 1708, he had some patients in St. Thomas's Hospital labouring under a very malignant kind of small-pox; they recovered by an extraordinary effort of nature, the occurrence of which was not overlooked by so acute a practitioner as Mead. Upon this, he recommended the use of purgatives in the decline of the disease, a practice he found of great benefit, and he communicated it to Freind, whose approbation it received. The introduction of this practice gave rise to a division of opinion among the faculty as to its propriety, and many books were written respecting it. Dr. Freind printed some letters of Mead, written to him in 1712, on the subject, though he did not print them until 1719. Dr. Woodward warmly attacked him, and this probably laid the basis of that breach of good-will between Woodward and Mead which continued during their lives. To Mead's work on the small-pox, he added a Latin translation from the Arabic of Rhazes' treatise on the disease. Mead was indebted to his friend Boerhaave for

a copy of the original work. Dr. Mead assisted, by order of the Prince of Wales, in August 1721, at the inoculation of six condemned criminals, who were selected for the experiment, and whose lives were to be spared upon their submission to it. The result was satisfactory, and the two young Princesses, Amelia and Caroline, were inoculated in April 1722, and had the small-pox favourably. Mead's work strongly recommends the practice of inoculation.

6. *Medica Sacra.* The design of this work, printed in 1749, was to account for the diseases mentioned in Scripture upon natural grounds. The demoniacs he looked upon as insane or epileptic persons. Many pamphlets have been published on this subject by Dr. Farmer and others, which are not necessary to be particularized. Mead's work was printed at London, Amsterdam, and Lausanne. It was translated by Stark, under the author's inspection. He died before it was finished, and Memoirs of his Life and Writings were prefixed to it. This is one of the works published by Mead after his retirement from the active duties of his profession. In his preface, he speaks of the strong passion he had for learning, even in his childhood, and, that although he had chosen medicine for his profession, he still never intermitted his literary studies, to which he had recourse as to refreshments, strengthening him in his daily labours, and charming his cares. His works have been collected together, and published at various times, at Gottingen, Paris, and Naples, in 1749; at Leyden, in 1752; at London, in 1762; and at Edinburgh, in 1763.

7. *Monita et Præcepta Medica.* This was published in 1751, at London; also at Hamburg, Leipsic, Leyden, and Paris. It has been printed in Latin, English, French, and German. It has also been held in estimation for the precepts it contains relative to the treatment of various diseases, and as being the result of extensive practice and attentive observation.

8. The Philosophical Transactions for 1703 contains an analysis of Bonomo's Letter to Redi, in 1687, relative to the cutaneous worms generating the itch. Also an account of three cases of hydrophobia. Three years previous to his death, which took place on February 16th, 1754, when Mead was in his eighty-first year, his intellectual powers began to decline, and his body became corpulent. Memoirs of his life were published by Dr. Maty, and a collection of Mead's Prescriptions, under the title of *Pharmacopœia Meadiana*, in three parts, in 1756-7-8, Catalogues of his collections of books, antiquities, paintings, drawings, &c. were printed, and are referred to by the collectors of the present day. His library

contained upwards of ten thousand volumes, and produced, by auction, £5518. 10s. 11d.; his medals, £1977. 17s.; his antiques, £3246. 15s. 6d.; his pictures, £3417. 11s.; and his prints, £1908. 14s. 6d.; making a total of £16,069. 8s. 11d. Dr. Askew had purchased his MSS. for £500, during his lifetime; and he sold his miniatures to the Prince of Wales, and his series of Greek Kings to Messrs. Canney and Kennedy. The bronze head of Homer, now in the British Museum, was purchased at Mead's sale by Lord Exeter, and presented to the museum.

Mead was twice married, first to Ruth, daughter of Mr. John Marsh, a merchant of London, by whom he had ten children, three of whom survived him; and, secondly, in 1724, to Miss Anne Alston, sister to Sir Rowland Alston, of Odell in Bedfordshire, by which marriage there was no issue. He was very much beloved by men of different politics to himself. He was a zealous whig. He was, however, intimate with Garth, Arbuthnot, and Freind. For the latter, he became one of the sureties upon his release from the Tower in 1723, where he had been confined during the suspension of the Habeas Corpus act, under a suspicion of being concerned in a plot for the restoration of the Stuarts. He remained imprisoned for several months. Mead was incessant in his endeavours to procure the liberation of his friend, but it was with great difficulty he could gain access to him. At length, being called to attend Sir Robert Walpole, he absolutely refused to prescribe for him unless Freind was released, and he succeeded in obtaining his liberation. A large party was assembled at Mead's in the evening to congratulate Friend; and upon his retiring with Arbuthnot, Mead took Freind into his closet, and there put into his hands a bag containing all the fees he had received from Freind's patients during his confinement, amounting to no less a sum than 5000 guineas. When Mead visited Freind in the Tower, he found him finishing a letter to him on the subject of the small-pox. He employed himself in writing his history of physic during his incarceration, but complained of the scantiness of his library to refer to, in such a place. It is no little praise of Mead to say, that he was the friend of Pope, Halley, and Newton. Amiable, however, as were his manners and disposition, he had a dispute (said to have been of a personal kind) with Dr. Woodward, and his animosity does not appear to have ceased with the life of Woodward. Several pamphlets were published in allusion to it; and in the view of the college prefixed to Dr. Ward's Lives of the Gresham Professors, the representation of a rencontre between these two physicians is given, where, with drawn sword, Mead is bidding Woodward defend himself or beg pardon, which it

is said he did, for he is depicted kneeling, and laying his sword at the feet of Mead.

> " Physicians, if they're wise, should never think,
> Of any arms but such as Pen and Ink." GARTH.

It seems a silly thing in Ward to have perpetuated such an occurrence in a biographical history of the Gresham Professors; but he was an intimate friend of Mead, and he also entered into the controversy for him with Middleton; and the late learned Dr. Samuel Parr told the writer of this sketch, but upon what authority it was given he is ignorant, that Ward and Letherland composed Mead's Latin works. Ward, it is known, translated into Latin the ninth edition of the work on the plague; he wrote the inscription on the monument erected in the Temple-church by Mead, to the memory of his brother Nathaniel; and he did the like for Mead himself, to that placed in Westminster Abbey, by his son, in the north aisle. Ward also translated three letters written by Mr. Buckley, the editor of De Thou's History, to Dr. Mead, into Latin, which were prefixed to the splendid edition of that work published in 1733, in seven volumes folio. Mead contributed largely, if not wholly, to promote this publication. He remunerated Carte, who had been, during his exile from England, engaged upon it, and he employed Buckley as the editor. Mead was very liberal in promoting all literary objects of importance. His museum was thrown open to students in painting and sculpture in the morning; and he became the patron of every thing that was elegant and useful. No less attention did he pay to science. His zeal to promote the adoption of Mr. Sutton's " Method for Extracting the Foul Air out of Ships," would most likely have been lost, but for the interposition and generosity of Mead. He caused a model in copper of the machine to be made, at an expense of £200, and presented it to the Royal Society, before some of the Fellows of which, and the Lords of the Admiralty, the experiment was made. A description of this was appended by Mead to his Treatise on the Scurvy, published in 1749.

The professional receipts of Mead are described as amounting to a very considerable sum, even beyond that acquired by Radcliffe. He was in full practice for nearly half a century. In one year he is said to have received more than £7000, and in others, from £5000 to £6000. Yet he was exceedingly liberal, never sparing in his advice and assistance to the poor, and often aiding them with money. It has been justly said of him, that " of all physicians who had ever flourished, he gained the most, spent the most, and enjoyed the highest favour during his lifetime, not only in his own,

but in foreign countries." Of the clergy he was never known, but in one instance, to take a fee. This was of a Mr. Robert Leake, who vexed the Doctor with his importunities to follow the regimen of Dr. Cheyne. Mead required of him ten guineas, but afterwards returned him six. Mead was a liberal subscriber to the Foundling Hospital; and he is reported to have stimulated Guy, the bookseller, to the foundation of the hospital which bears his name.

Mead's habits of life, his manner of receiving and entertaining foreigners and distinguished persons, must have entailed upon him the expenditure of a princely fortune. No foreigner of any consequence visited London without an introduction to Mead, or departed without partaking of his hospitality. He maintained a correspondence with the chief literati of foreign countries, and he became universally renowned for his taste, learning, and science. He commanded respect beyond his contemporaries, and was distinguished in the republic of letters no less than in his own profession.

Joannes Baptista Morgagnus

Patavii Idibus Aprilis CIↃ IↃCC XXVIII.

JOHN BAPTIST MORGAGNI, M.D. F.R.S.

ETC. ETC. ETC.

"Vir ingenii, memoriæ, studii incomparabilis."—HALLER.

VERY few professors of medical science belonging to the seventeenth century have had their names transmitted to posterity with more eclat than the subject of the present memoir. This has arisen from the variety and excellence of his labours; and perhaps no physician is entitled to more praise for placing the treatment of diseases upon sound principles, than John Baptist Morgagni. His observations on morbid anatomy, and the connexion of the appearances presented with the phenomena of disease, hold their value unabated even to the present time, because they were the result of patient and able investigation into the various conditions of the animal economy, both in health and disease.

JOHN BAPTIST MORGAGNI was born at Forli, a town in Italy, on February 25, 1682. He lost his father (Fabricius Morgagni) at a very early age; but his mother, (Marie Tornielli) being a woman of considerable understanding, superintended the education of her son, and cultivated the taste he manifested for study. His progress in the belles lettres and the learned languages was very considerable; and his acquisitions in philosophy, upon subjects of which he composed several theses, published and dedicated to Cardinal Ottoboni, were generally admired, and procured for him much distinction. He, however, selected medicine for his profession, and at the early age of sixteen took his degree of Doctor of Medicine at the University of Bologna. His knowledge of anatomy was such, that at the age of twenty he taught it with great reputation. His teachers were the celebrated Antonio Maria Valsalva, Hippolito Francisco Albertini, and John James de Sandris. His intense application to study excited fears for his safety. His memory is said to have been astonishing, and his judgment was equally powerful, a combination of faculties not often to be met with. An affection of the eyes, the result of continued application, compelled him to abstain

from study for some time: a return to his native place, and proper attention, restored his sight, the loss of which there had been reason to apprehend. Upon his return to Bologna, he assisted Valsalva in his anatomical researches on the ear, and made the greater number of preparations described in that valuable work, *De Aure Humana*. He supplied the place of Valsalva during his absence from Bologna, on a visit to Parma, and became exceedingly popular as a lecturer, being eloquent in his discourse, and illustrating his subjects by a great variety of preparations.

Desirous of increasing his store of knowledge, Morgagni visited Venice; thence he journeyed to Padua, and, having attended the lectures of the most celebrated teachers attached to these universities, he determined to return and establish himself in his native place; but here the sphere of his utility was too contracted, and, in accordance with the advice of his friend, Professor Domenicho Guglielmini, he returned to Padua. Guglielmini dying in 1710, was succeeded by Antonio Vallisnieri, by which a chair of anatomy became vacant, and Morgagni was appointed to it in 1711. Here he contracted a lasting friendship with Lancisi, and assisted him in his Explanation of the Tables of Eustachius, published in 1714. Few men secured to themselves more numerous friends, or received greater attention from those who were distinguished by rank and intellect, than did Morgagni. All the principal persons visiting Italy made his acquaintance. Among those of whom mention has been made, we may enumerate Charles Emanuel III. King of Sardinia, the Popes Clement XI., XII., and XIII., and Benedict XIV. The latter has, indeed, made mention of him in his work, *De Beatificatione Servorum Dei*. In his own profession he was admired and esteemed by Valsalva, Albertini, Lancisi, Verheyen, Heister, Ruysch, Boerhaave, Mead, Senac, Haller, Meckel, Le Clerc, Fantoni, Nigrisoli, Michelotti, Molinetti, and numerous others. The first chair of anatomy at Padua became vacant by the death of Michel Angelo Molinetti in 1715, and the senate of Venice appointed Morgagni to it.

Although his acquirements extended beyond the province of medicine and its collateral sciences, and although he had cultivated literature, history, and antiquities, his chief object of study was anatomy. To this true basis of medical science his labours were chiefly directed, and his whole life may be said to have been devoted to its elucidation. The value of his researches were estimated during his lifetime, and his name was enrolled as a member of the Academia Naturæ Curiosorum in 1708, of the Royal Society of London in 1724, and of the Academy of Sciences of Paris in 1731, he being therein named as the successor of Ruysch. He was also made a member of the Imperial Academy of St. Petersburgh in 1735, and of the

Academy of Berlin, in 1754. He was also one of the first associates of the Institute of Bologna. In short, his fame spread throughout Europe, and the inhabitants of his native city, proud of their countryman, and the esteem so universally entertained for him, erected his bust in the principal palace, with the following inscription :

Jo. Bapt. Morgagno, Nob. Forol.
Patria,
Inventis, Librisque ejus probatissimis
Ubique gentium illustrata,
Decrevit A.D. MDCCLXIII.
Ponendam in celeberrimo hoc loco
Marmoream effigiem
Adhuc viventis.

Around this was written,

Hic est, ut perhibent doctorum corda virorum,
Primus in humani corporis Historiâ.

This testimony to his talents was erected during his life, which did not terminate until the 5th Dec. 1771, he having then nearly completed his ninetieth year.

" Of no distemper, of no blast he died,
But fell like autumn-fruit that mellowed long,
Ev'n wondered at because he dropp'd no sooner.
Fate seemed to wind him up for fourscore years,
Yet freely ran he on ten winter's more;
'Till, like a clock worn out with eating time,
The wheels of weary life at last stood still."

Dryden's Œdipus.

Morgagni was of a fine stature, robust constitution, and possessed an agreeable and lively countenance. He married Paola Vergieri, a noble lady of Forli, by whom he had fifteen children, eight of whom were living at the time of his decease.

It now remains to enumerate the works which have emanated from his pen. The whole have been collected together in five folio volumes, and published at Bassano, in 1765. They contain the *Adversaria Anatomica*. This work contributed to establish the fame of Morgagni both at home and abroad. It contains a variety of observations on minute anatomy, of much value. The *Adversaria* are six in number, and were printed at different periods and places. The first at Bologna, in 1706, the second and third

at Padua, in 1717, and the fourth, fifth, and sixth, also at Padua, in 1719. They were collected and published at Leyden, in 1723-4, and again in 1741, which is the best edition. The *Epistolæ Anatomicæ* and *Nova Institutionum Medicarum Idea*, are not less valuable, and have been frequently printed. The *Nov. Inst. Med. Idea*, formed an introductory discourse on entering upon his professional duties, and points out to the student the best modes of acquiring professional knowledge. The study of anatomy, and the materia medica, is ardently enforced. The *Epist. Anat.* are two in number. The first relates to pathological anatomy, and the second is in connexion with a controversy with Bianchi, relative to the intimate structure of the liver. But his chief work is unquestionably *De Sedibus et Causis Morborum per anatomen indagatis*, first printed in 1761, the author being then in his eightieth year. The last edition is that of Paris, by Chaussier and Adelon in 1820, in 8 vols. 8vo. This forms the ninth edition of this very important work, which gives the results of his practice and observation. An exceedingly good translation of it into English, was made by Dr. Benjamin Alexander, and published at London in 3 vols. 4to., in 1769, which work is now very scarce. Morgagni's *Opuscula Miscellanea* are very numerous, and illustrate various parts of the human body, and describe particular diseases. They are too numerous for insertion here, but can easily be referred to by any one anxious to make acquaintance with all the productions of this able physician. In addition to these anatomical and medical treatises, he published also some tracts on medico-legal subjects, and memoirs on the life and writings of his friends Valsalva and Guglielmini. A correct list of his writings is affixed to the Paris edition of his work on "the Seats and Causes of Diseases investigated by anatomy."

The Portrait prefixed to this Memoir is taken from an extremely rare engraving by Renard, in the possession of H. U. Diamond, Esq.; and the autograph, from a letter deposited in the archives of the Royal Society.

Johannes Radcliffe

JOHN RADCLIFFE, M.D.

"The lawyer is judged by the virtue of his pleading, and not by the issue of the cause. The master of the ship is judged by the directing his course aright, and not by the fortune of the voyage. But the physician, and perhaps the politician, hath no particular acts demonstrative of his ability, but is judged most by the event."—BACON.

THE biography of this eccentric man has been repeatedly written. He has been described as one "who lived, if any man ever did so, entirely after his own humour, and in the completest disregard of the opinions of the world." As a practical physician, he was unrivalled. He amassed a large fortune, and he devoted it to the promotion of learning and science. His eccentricities were remarkable, and have been freely circulated. A collection of the various anecdotes related of him would form a very curious and interesting volume.

JOHN RADCLIFFE was a native of Yorkshire, and born at Wakefield in 1650. He received instruction in the Greek and Latin languages at the grammar-school of this town, and when he had reached his fifteenth year, he was sent to University College, Oxford. At this college he took his first degree in arts, and afterwards removed to Lincoln College, of which he was subsequently elected a Fellow. Quickness of intellect, for which he was ever remarkable, enabled him rapidly to acquire information in the several branches of medical study; and having, it is said, made considerable progress in botany, chemistry, and anatomy, he took a degree of M.A. in 1672, and then enrolled himself for medicine. Pretensions to learning, he had none; and whatever deficiency he may have manifested in this respect, was compensated by a wit, vivacity, and shrewdness which characterized every act of his life. He appears, indeed, to have entertained but a mean opinion of the practice of physic, and consulted very few books.* When

* Garth said, humorously enough, that, for Radcliffe to leave a library, was as if "an eunuch should found a seraglio."

Dr. Bathurst, the master of Trinity College, visited him, he inquired of him where his study was. To which Radcliffe, pointing to a few phials, a skeleton, and a herbal, replied, "Sir, this is Radcliffe's library." He held that the whole mystery of physic might be written on "half a sheet of paper." This, however, ill comports with that which he is said to have uttered towards the latter part of his life, that, "when a young practitioner, he possessed twenty remedies for every disease; and at the close of his career, he found twenty diseases for which he had not one remedy." This reflection, the result of his extensive experience and penetration, will convey to every member of the profession a most impressive lesson. He entertained an abhorrence of quackery. Among many of the artifices by which the credulous have been imposed upon, the pretensions of the Urinoscopists of former days were not the least significant. A foolish woman, provided with the infallible indication of disease, came to Radcliffe, and, dropping a curtesy, told him that, having heard of his great fame, she made bold to bring him a fee, by which she hoped his worship would be prevailed upon to tell her the distemper her husband lay sick of, and to prescribe the means for his relief. "Where is he?" cries the Doctor. "Sick in bed, four miles off," replies the woman. Taking the vessel, and casting an eye upon its contents, he inquired of the woman what trade the patient was of; and, learning that he was a boot-maker, "Very well," replied the Doctor; and having retired for a moment to make the requisite substitution, "Take this home with you; and if your husband will undertake to fit me with a pair of boots by its inspection, I will make no question of prescribing for his distemper by a similar examination."

In 1675 Radcliffe took his Bachelor's degree in medicine, and began to practise; and in 1682 he received the degree of M.D. He remained at Oxford two years after this, and enjoyed great reputation, notwithstanding the numerous disputes in which he was involved with the older practitioners, who could not tolerate his disregard of all ancient rules and practice. In 1684 he removed to London, and resided in Bow-street, Covent Garden. The chief practice of the metropolis was, at this time, held by Dr. Lower, whose reputation, however, was on the decline, on account of his attachment to Whig principles, (for politics and fashion have ever had much to do with the success of a man in physic,) and in less than a year from his arrival in town, Radcliffe was in the possession of an extensive and lucrative practice, receiving not less than twenty guineas a day. His wit and humour contributed not a little to his popularity, and his society was much courted. The princess Anne of Denmark appointed him her physician in 1686.

" His conversation at this time, (says one of his biographers) was held in as good repute as his advice; and what with his pleasantry of discourse, and readiness of wit in making replies to any sort of questions, he was a diverting companion to the last degree, insomuch, that he was very often sent for, and presented with fees for pretended ailments, when the real design of both sexes, that were equally delighted with him, was to reap advantage by his way of talk. Not but he was often out of humour at being dealt with after that manner, and would frequently give biting replies to such as were pressing with him for his prescriptions upon trifling occasions."

Radcliffe is said to have been very greedy of his fees, and avaricious in other respects. He had a great love of accumulating riches; but he was no niggard in their distribution. Thus we find, that, as early as 1687, he was desirous of assisting the college at Oxford at which he was first admitted, and that he caused the eastern window over the altar of University College to be put up at his own expense. This was a magnificent gift: it consists of beautifully painted glass, representing the Nativity of Christ. Beneath is an inscription relating to the donor.—" D.D. Joan. Radcliffe, M.D. hujus Collegii quondam Socius, A.D. 1687." This is not strictly correct, as he was senior scholar, but not a fellow of this college. He was a fellow of Lincoln; but he resigned his fellowship in 1677, owing to the opposition of Dr. Marshall, the rector, against whom Radcliffe had uttered some pleasantries, and who, in revenge, opposed the Doctor's application for a faculty place, to dispense with his taking holy orders, which the statutes of the college required that he should do.

No man was ever less calculated than Radcliffe to be a courtier, for his freedom often amounted to insolence; yet he was much employed at court. This must have arisen from his celebrity as a practitioner. The love of person and ease, and the hope of averting pain and death, have never failed to operate with great power in kings and potentates. After the Revolution, he was much about the person of King William, and his court. When that sovereign returned from Holland in 1699, he was seriously indisposed, and he sent for Radcliffe, and showed him his ankles, which were very much swollen, whilst the other parts of his body were greatly emaciated. " What think you of these?" " Why, truly," replied the physician, " I would not have your majesty's two legs for your three kingdoms;" which freedom so lost the king's favour, that no intercessions could ever recover it. The king's employment of Radcliffe arose, in the first instance, from his gratitude for the recovery of two of his favourites, Mr. Bentinck,* and Mr. Zulestein,† and for which the physician was presented by the king with 500 guineas, and an offer to be one of his majesty's physicians, with a salary of £200 more than any other. Radcliffe accepted the present, but declined

* Afterwards Earl of Portland. † Afterwards Earl of Rochford.

the appointment, it is conjectured from worldly motives, the settlement of the crown being then in its infancy, and its security likely to be disturbed by any accident. The weakness of the constitution of the king, however, rendered Radcliffe's visits of necessary frequency; and it is said, that, for the first eleven years of his majesty's reign, the physician received upwards of 600 guineas annually.

In 1695, he was sent abroad to attend the Earl of Albemarle, a great favourite of his majesty, and who had a considerable command in the army, during the campaign which ended with the taking of Namur. Radcliffe remained in the camp a week only; was successful in the treatment of his patient, and received from King William £1,200; and from Lord Albermarle 400 guineas, and a diamond ring; he was offered also the dignity of a baronet, which he begged to decline, on the plea of having no children to inherit the title. The humour possessed by Radcliffe, is illustrated by an anecdote told by Pittis, his biographer, upon occasion of an interview with the king, relative to his state of health.

"The king, when the Doctor was admitted, was reading Sir Roger L'Estrange's new version of Æsop's Fables, and told him, that he had once more sent for him, to try the effects of his great skill, notwithstanding he had been told by his body-physicians, who were not sensible of his inward decay, that he might yet live many years, and would very speedily recover. Upon which the Doctor, having put some interrogatories to the king, very readily asked leave of his majesty to turn to a fable in the book before him, which would let the king know how he had been treated, and read it to him in these words:—'Pray, sir, how do you find yourself?' says the doctor to his patient. 'Why, truly,' says the patient, 'I have had a most violent sweat.' 'Oh! the best sign in the world,' quoth the doctor. And then a little while after, he is at it again, with a 'Pray how do you find your body?' 'Alas!' says the other, 'I have just now had such a terrible fit of horror and shaking upon me!' 'Why, this is all as it should be,' says the physician, 'it shows a mighty strength of nature.' And then he comes over him the third time with the same question again: 'Why, I am all swelled,' says t'other, 'as if I had a dropsy.' 'Best of all,' quoth the doctor,' and goes his way. Soon after this, comes one of the sick man's friends to him, with the same question, 'How he felt himself?' 'Why, truly, so well,' says he, 'that I am e'en ready to die of I know not how *many good signs and tokens*.'

"'May it please your majesty, yours and the sick man's case is the very same,' cries Radcliffe—'you are buoyed up with hopes that your malady will soon be driven away, by persons that are not apprized of means to do it, and know not the true cause of your ailment; but I must be plain with you, and tell you that, in all probability, if your majesty will adhere to my prescriptions, it may be in my power to lengthen out your life for three or four years; but beyond that time, nothing in physic can protract it, for the juices of your stomach are all vitiated; your whole mass of blood is corrupted, and your nutriment, for the most part, turns to water. However, if your majesty will forbear making long visits to the Earl of Bradford, (where the king was wont to drink very hard,) I'll try what can be done to make you live easily, tho' I cannot venture to say I can make you live longer than I have told you.' He then left a recipe behind him, which was so happy in its effects, as to enable the king, not only to make a progress in the western parts of his kingdom, but to go abroad, and divert himself at his palace at Loo, in Holland."

Radcliffe is reported to have attended the lady of Sir John Holt in a severe illness, with unusual diligence, and to have said that he did so out of pique to the husband, who was supposed not to be over fond of her. Many instances of the caprice of Radcliffe are upon record. Bishop Atterbury relates, that when the lady of Sir John Trevor, the Master of the Rolls, was dying, she was given over by Radcliffe as incurable. The master, thinking it a compliment to Radcliffe, not to join any of the London physicians with him, sent to Oxford for Dr. Breach, an old crony, to consult on that occasion; which made such a *breach* with Radcliffe, that he set out in a few days for Bath, where he is represented "as delighting scarce in any other company but that of papists." Richardson relates the following of Radcliffe and his successor Mead.

"'Mead, I love you,' says Radcliffe, 'and now I will tell you a sure secret to make your fortune; use all mankind ill.' And it certainly was his own practice. He owned he was avaricious, even to spunging, whenever he any way could, at a tavern reckoning, a sixpence or shilling among the rest of the company, under pretence of hating (as he ever did) to change a guinea, 'because (said he) it slips away so fast." He could never be brought to pay bills without much following and importunity; nor then, if there appeared any chance of wearying them out. A paviour, after long and fruitless attempts, caught him just getting out of his chariot at his own door, in Bloomsbury-square, (where he had removed from Bow-street,) and set upon him. 'Why, you rascal,' said the Doctor, 'do you pretend to be paid for such a piece of work? why, you have spoiled my pavement, and then covered it over with earth to hide your bad work.' 'Doctor,' said the paviour, 'mine is not the only bad work that the earth hides.' 'You dog you,' said the Doctor, 'are you a wit? you must be poor, come in,'—and paid him. 'Nobody,' adds Mr. Richardson, 'ever practised this rule 'of using all mankind ill,' less than Dr. Mead, (who told me himself the story,) and who has, I have been informed by great physicians, got as much again by his practice as Dr. Radcliffe did."

An anecdote must here be related of the Doctor and Sir Godfrey Kneller.

"When Radcliffe resided in Bow-street, his garden-wall was contiguous to that of Sir Godfrey's, who was remarkable for his collection of exotic and choice plants, of which the Doctor was a great admirer, and he solicited of the great painter, with whom he enjoyed an intimacy, to permit a door to be made for free intercourse with both gardens, but in such a manner, that no inconvenience should be experienced by either family. Sir Godfrey most readily consented to the proposal; but the Doctor's servants took such liberties, and occasioned such destruction of Sir Godfrey's plants, that he was under the necessity of complaining to the Doctor, who, however, took no notice of the matter. Upon which, the painter sent word by one of his servants, that he should be obliged to brick up the door; a threat that roused Radcliffe's choler, who sent a message back, that Sir Godfrey 'might do what he thought fit, in relation to the door, so that he *didn't paint it.*' The servant for some time hesitated to deliver this impertinent reply; but being commanded by Sir Godfrey to deliver it word for word, which being done, the painter directed him to return to the Doctor, present his service to him, and say that he could take *any thing from him but physic.*"

In 1694, Queen Mary caught the small-pox, and died. According to Bishop Burnet, the fatal termination of the disease was owing to a want of skill on the part of Radcliffe. This is not to be credited, for Radcliffe was called in too late to be of any service, and he had brought himself into notice at Oxford, chiefly by his judicious adoption of the method proposed by the renowned Sydenham, for the treatment of this malady. Radcliffe condemned the means that had been employed in the case of the queen, and declared "her majesty was a dead woman, for it was impossible to do any good in her case, when remedies had been given that were so contrary to the nature of the distemper; yet he would endeavour to do all that lay in his power to give her some ease." His successful treatment of the Duke of Beaufort in the small-pox is upon record, and there certainly is no ground for impeaching the ability of Radcliffe on this head.

Radcliffe lost the favour of the princess Anne, for neglecting to visit her when sent for, owing to his attachment to the bottle, and Dr. Gibbons was appointed physician in his room. When Radcliffe was sent for, he promised to go to St. James's soon after; but neglecting to do so, a second messenger was sent, to detail the case; upon which he swore by his Maker, "that her highness's distemper was nothing but the vapours, and that she was in as good a state of health as any woman breathing, could she but believe it." The Earl of Godolphin endeavoured to reinstate Radcliffe, but the queen could not be prevailed upon to reappoint him, saying, that he would send her word again, "that her ailments were nothing but the vapours." He was, however, consulted in critical matters, and is said to have received large sums for his prescriptions, although he was not engaged as the queen's domestic physician. In the last illness of the queen he was sent for to Carshalton, about noon, by order of the council. He said, he had "taken physic, and couldn't come." This is told upon the authority of Mr. Ford in a letter to Dean Swift. It appears that for this conduct, Sir Justinian Isham, a bottle-companion of the Doctor's, and a member of the House of Commons, moved that he be summoned to attend in his place, (for he represented the town of Buckingham, to which he had been elected in 1713 in this parliament,) in order to be censured for not attending her majesty. From a letter which is extant of Radcliffe to one of his friends, it would seem that he had not been sent for by the council, but by some private person, (Lady Masham,) for he deplores the death of the queen; and after commending what had been suggested for her relief by Dr. Mead, he proceeds to condemn the people about her: "The plagues of Egypt fall on them," says he; "I know the nature of attending crowned

heads in their last moments too well, to be fond of waiting upon them, without being sent for by a proper authority." Public resentment, however, was strongly manifested, and Radcliffe was not without fears of being assassinated, as appears by a letter addressed to Mead, August 3rd, 1714. He lived only three months after the death of the queen, and his days have generally been considered as shortened by the dread of popular vengeance, and the want of society in the country village in which he closed his life. He died the 1st of November, 1714, being just sixty-four years of age.

The pleasures of the table had great charms for Radcliffe; and Dr. Lettsom has reported a curious relation on this subject, as told to him by the eccentric Dr. Monsey.*

Radcliffe's professional brethren in general held, or affected to hold, him in great contempt as a physician; but Mead says, that "he was deservedly at the head of his profession, on account of his great medical penetration and experience." He waged perpetual war with his brethren, and was lampooned and ridiculed in a variety of ways. Pope, Arbuthnot, and others, it is known, were engaged to write the Memoirs of Martinus Scriblerus. Arbuthnot writes to Swift,

"Pray remember Martin, who is an innocent fellow, and will not disturb your solitude. The ridicule of medicine is so copious a subject, that I must only here and there touch it. I have made him study physic from the apothecaries' bills, where there is a good, plentiful field for a satire upon the present practice. One of his projects was, by a stamp upon blistering-plasters and melilot by the yard, to raise money for the government, and to give it to Radcliffe and others to farm. There was a problem about the doses of purging medicines, published four years ago, showing that they ought to be in proportion to the bulk of the patient. From thence, Martin endeavours to determine the question about the weight of the ancient men, by the doses of physic that were given them. One of his last inventions was a map of diseases for the three cavities of the body, and one for the external parts, just like the four quarters of the world. Then the great diseases are like capital cities, with their symptoms all like streets and suburbs, with the roads that lead to other diseases. It is thicker set with towns than any Flanders map you ever saw. Radcliffe is painted at the corner of the map, contending for the universal empire of this world, and the rest of the physicians opposing his ambitious designs, with a project of a treaty of partition to settle peace."

May 26th, 1704, Radcliffe carried some cause against an apothecary, and two days before, Atterbury says, "a play was acted, wherein the Doctor was extremely ridiculed upon that head, of his quarrel with the apothecary. A great number of persons of quality were present; among the rest, the Duchess of Marlborough, and the maids of honour. The

* See Letter to Dr. Cuming in Pettigrew's Memoirs of the Life and Writings of Dr. Lettsom, vol. i. p. 44.

passages where the Doctor was affronted, were received with great applause." Radcliffe was also ridiculed by Steele in the Tatler,* under the title of "The Mourning Æsculapius, the languishing hopeless lover of the divine Hebe, emblem of youth and beauty." A lady, it is said, had been attended by Radcliffe in a fever; he was smitten by her charms, urged his suit, but was rejected. He never married; but in 1693 was upon the point of contracting an union with the only daughter of a wealthy citizen; but before the conclusion of the affair, Radcliffe ascertained that the lady had not been spotless; and the discovery of an intrigue with her father's book-keeper, put aside the connexion.

In 1703 Radcliffe had an attack of pleurisy, which had nigh proved fatal to him, and partly from his own imprudence, for he neglected himself at the outset of the disease, and indulged in free potations; and, had it not been for the vigorous treatment of Mr. Bernard, the serjeant-surgeon, who took from him 100 ounces of blood, he would probably have sunk under the attack. He was fully sensible of his danger, and made his will, leaving the greatest part of his estate to charity, and several thousand pounds for the relief of sick seamen set ashore. His obstinacy manifested itself throughout, for, having lost the quantity of blood stated, he resolved upon being removed to Kensington, and was taken thither in a chair by four men, and during the journey he fainted away. Dr. Atterbury relates these particulars, and says that he slept immediately afterwards, and that he was likely to do well; "so that the town physicians, who expected to share his practice, begin now to think themselves disappointed." Serjeant-surgeon Bernard, in reply to the inquiries of the queen, related his ungovernable conduct, upon which her majesty remarked, that "nobody had reason to take any thing ill from him, since it was plain he used other people no worse than he used himself." The effect of this severe attack was, however, to make him serious, and he is described as being "very devout."

About the time the bishops were sent to the Tower, Radcliffe was much tormented to turn Papist. Mr. Obadiah Walker, of Trinity College, urged him strongly on this subject; to which Radcliffe made a frank and noble reply. He says:—

"I should be in as unhappy a condition in this life, as you fear I shall be in the next, were I to be treated as a turn-coat; and must tell you, that I can be serious no longer, while you endeavour to make me believe what, I am apt to think, you give no credit to yourself. Fathers, and councils, and antique authorities, may have their influence in their proper places; but should any of them all, though covered with dust 1400 years ago, tell me, that the bottle I am now drinking with some of your acquaintance is a wheelbarrow, and the glass in my hand a salamander, I should ask leave to dissent from them all."

* No. 44.

Mr. Walker fell into great poverty and distress, and Radcliffe very generously allowed him, to the day of his death, a handsome competency, and had him, after death, creditably interred.

Radcliffe thought that "it was more the business of a bishop and a statesman, to make curious researches into matters of revelation, than of a physician; and he besought his majesty, who had sent to him in anxiety that he should become a Roman Catholic, out of his grace and favour to all his loving subjects, to let him continue in the religion of the latter, which would neither endanger his government in church nor state."

In the Lansdowne MSS. contained in the British Museum, and marked 979, among Bishop Kennett's collection, I find the following anecdote:

"I remember what Dr. Mede has told to several of his friends, that he fell much into the favour of Dr. Radcliffe a few years before his death, and visited him often at Carshalton, where he observed upon occasion that there was no Bible to be found in the house. Dr. Mede had a mind to supply that defect, without taking notice of it; and therefore one day carried down with him a very beautiful Bible that he had lately bought, which had lain in a closet of King William for his Maj[ies] own use, and left it as a curiosity that he had pickt up by the way. When Dr. Mede made the last visit to him, he found that Dr. R. had read in it as far as about the middle of the Book of Exodus, from whence it might be inferred that he had never before read the Scriptures; as I doubt must be inferred of Dr. Linacre, from the account given by Sir John Cheke."

Radcliffe entertained great respect for the clergy, and bestowed his patronage with judgment. He promoted Dr. Bingham to the living of Headbourne-worthy, Hants, and Dr. Hudson was advanced to the headship of St. Mary's Hall by his influence and solicitation. His attachment to and respect for this gentleman is said to have occasioned the display of that munificence towards Oxford by which his memory will be held in remembrance. He left his estate in Yorkshire to University College in trust for the foundation of two travelling fellowships, and for the purchase of perpetual advowsons for the members of the said college. He left also £5000 for the enlargement of the building of the same college, £40,000 for the building of a library, £150 per annum to the librarian, and £100 per annum for the purchase of books. *Munus Apolline dignum.*—Hor.

His estates in Buckinghamshire, Northamptonshire, Surrey, &c., were left to his executors for charitable purposes, as they should think best. The Radcliffe Infirmary and the Observatory have been built from these funds, and in 1825 the trustees very properly devoted £2000 towards the building of the present College of Physicians in Pall-Mall East, and £2700 to defray the expenses of completing the Oxford Lunatic Asylum. He left to St. Bartholomew's Hospital £500 per annum towards mending their diet, and £100 per annum for the purchase of linen. His private charities during his life

were not inconsiderable. He gave various sums in fictitious names, that the donor might not be known; he subscribed liberally to a collection for propagating the Gospel in foreign parts, and to the relief of the poor non-juring clergy, and also to the Episcopalians in Scotland, persecuted by the Presbyterian clergy. He assisted also the celebrated Dr. Sacheverell.

His practice must have been excessive,* to have accumulated so large a fortune, and many instances of large fees received by him have been recorded. In addition to those which have already been mentioned, he received 1000 guineas for attending the young Prince William, Duke of Gloucester, in 1691. He lost £5000 in a speculation he made in a venture to the East Indies; the vessel, upon its return, being captured, and the property lost. He was induced to this act by Betterton, the tragedian, who was ruined by the event. When Radcliffe heard of his loss, he was enjoying himself at the Bull's Head Tavern, in Clare Market, and he desired his companions not to interrupt the circulation of the glass, "for that he had no more to do but to go up so many pair of stairs, to make himself whole again."

His body lay in state at his residence until the 27th of November, when it was removed to Oxford for burial in St. Mary's Church. Another lying-in state here took place, and a very imposing ceremonial was observed on occasion of his funeral. On the coffin-plate was simply inscribed—

JOHN RADCLIFFE, M.D.
DIED NOVEMBER THE 1ST, 1714,
IN THE 65TH YEAR
OF HIS AGE.

A gold-headed cane is deposited in the library of the Royal College of Physicians, said to be that with which Radcliffe was wont to visit his patients. It was given to Mead, and successively passed to Askew, Pitcairn, and Baillie, by whom it was bequeathed to the College.. A very amusing and clever work, embodying the principal occurrences in the lives of these five celebrated physicians, was a few years since published, under the title of "The Gold-headed Cane." The work is attributed to the pen of Dr. Macmichael.

Of professional works, Radcliffe left none. A Pharmacopœia Radcliffiana was published in 1716, and Dr. Strother put forth a Practical Dispensatory, containing a number of the prescriptions of Radcliffe. Memoirs of his Life, interspersed with letters, and accompanied by a copy of his will, were printed in 1715, 1716, and 1736.

* Dandridge, the apothecary patronized by Radcliffe, is reported to have died worth £50,000.

Gottlieb Tunb
amsterd 19 Apri
1731
Dr Ruysch.

FREDERIC RUYSCH, M.D. F.R.S.

"Utilium sagax rerum."—Hor.

The name of Frederic Ruysch is celebrated in the annals of anatomy and medicine. His father, Henry Ruysch, was secretary of the States General of Holland. Frederic was born at the Hague, March 23, 1638. Having studied at Leyden, and being destined for the medical profession, he devoted himself with uncommon assiduity to the study of anatomy. He took his Doctor's degree in 1664, returned to the Hague, married, and entered into practice. Shortly after this, Holland was visited by the plague: it raged with the greatest fury, and young Ruysch was selected by the States to take the charge of the cases that occurred at the Hague. He performed the painful and onerous duties connected with such a position, to the entire satisfaction of his fellow-citizens.

His first work, "Dilucidatio Valvularum in Vasis Lymphaticis," was published in 1665, and again in 1687; and this work contained an account of the controversy in which he had, at the instance of Sylvius and Van Horne, been engaged with Louis de Bils, relative to his proposed method of preserving bodies from putrefaction, and which inquiry produced certain discoveries in the lymphatic system. Ruysch lays claim to being the discoverer and demonstrator of the valves belonging to this system of vessels; but he admits that they might have been seen previously by other anatomists. The publication of this work tended to increase the reputation he had already acquired; and he was, in the succeeding year, invited to the chair of anatomy at Amsterdam. He now determined to devote his life principally to this essential branch of medical study; and human and comparative anatomy were alike the objects of his profound attention. His minute dissertations have never been surpassed, nor his ability in the various modes of making anatomical preparations. His injections have been surprisingly minute, and have served to display the most elaborate

structure of the human body. His success in the injection of the blood-vessels was such as fairly to warrant the epithet "marvellous," which has been applied to them. The extreme branches were so well filled as to give to the dead body "the freshness of youth, and to imitate sleep rather than death."* Reginald de Graaf was the first to employ the syringe to aid researches into the anatomical structure of human bodies; and to him and Swammerdam are generally attributed the adoption of coloured injection into the vessels; and to Ruysch, Swammerdam is said to have imparted his knowledge upon quitting the paths of medicine and philosophy for the mysteries and superstition of Bourignon. An instance of the success of Ruysch in the preparation of bodies by injection, is recorded in the case of Admiral Berkeley, who was killed in an action between the English and Dutch fleets on the 11th of June, 1666. The body of the admiral was rapidly advancing to putrefaction, and was therefore, by order of the States General, submitted to Ruysch for injection, to prevent further corruption. In this he succeeded so well, that it came out of his hands so improved and so fresh, that it was transmitted to England, and the operator rewarded handsomely for the exercise of his ingenious talent. A museum formed with such ability could not fail to be exceedingly attractive, and it was visited by the learned from all parts of the world. The czar Peter, in his journey through Holland in 1698, spent many days in the museum of Ruysch, partook of his frugal fare, and in 1717 arranged for the purchase of the collection for the sum of 30,000 florins, and consigned it to Petersburgh. The czar is reported to have been so delighted with the preparations, that he could not withhold from kissing a dead infant which appeared to smile upon him.

In 1691, Ruysch published in 4to., "Observationum Anatomico-Chirurgicarum Centuria;" to which he added, a catalogue of the rarities contained in his collection. In 1710, the "Thesaurus Anatomicus," 2 tom. 4to.; also the "Thesaurus Animalium:" and between the years 1717 and 1723, his "Adversaria Anatomico-Medico-Chirurgica." The "Epistolæ

* "Tous les cadavres qu'il a injectés avoient le lustre, l'éclat, et la fraîcheur de la jeunesse : on les auroit pris pour des personnes vivantes profondément endormies, et à considérer les membres articulés, on les auroit cru prêts à marcher. Enfin on pourroit presque dire que Ruysch avoit découvert le secret de ressusciter les morts. Ses momies étoient un spectacle de vie, au-lieu que celles des Egyptiens n'offroient que l'image de la mort. L'homme sembloit continuer de vivre dans les unes et continuer de mourir dans les autres!"—Eloy, Dict. Hist.

Anatomicæ" were published in several parts at different times. The whole of his works have been collected, and published in 5 vols. 4to. as, "Opera Omnia Anatomico-Medico-Chirurgica," in 1721 and 1735. The latter is the best edition.

The minute dissections of Ruysch, and the length of time devoted by him to their display, doubtless rendered him incapable of devoting much time to reading, and probably led him to claim the discovery of many parts previously noticed by other observers. This brought him into many disputes, so that no name, as a controversialist in anatomical matters, is more familiar than that of Ruysch. His merits must, however, be admitted, for his researches into the course and communications of the bronchial arteries, the vascularity of the brain, the structure of the tunica arachnoidea, and the formation of the glandular system. His discoveries as to the structure of parts of the eye and ear also entitle him to regard. He was appointed Professor of Physic in 1685, and he filled the chair for forty-three years; when, from a fall in his chamber, he fractured his thigh-bone, and became disabled for farther exertion. He was highly esteemed abroad, and was elected a Fellow of the Royal Society of London; and he was the successor of the immortal Sir Isaac Newton in the Academy of Sciences of Paris. He was also a Member of the Academy of Petersburgh. He died of fever, February 22d, 1731, having reached the advanced age of ninety-three years.

Ruysch possessed the confidence of the ministers of his country. He was their forensic physician, and he also presided over the establishment for midwifery. He paid much attention to botany, and dissected plants with the same precision as bodies belonging to the animal kingdom. He filled the botanical chair; and he put forth, at the age of ninety, "Curæ renovatæ, seu Thesaurus Anatomicus post curas posteriores novus," which relates particularly to these researches. At eighty years of age he had the hardiness to commence the formation of another museum, and succeeded in accomplishing his object, and he even made a catalogue of the collection.

Posterity has not been remiss in assigning to Ruysch the merit due to him for his laborious anatomical researches, nor niggardly in bestowing praise upon the excellence and beauty of his preparations. According to all accounts, no collection ever contained such specimens; and some varieties in the mode of their preparation, from those usually adopted by anatomists, must have been employed. Reproach, deserved reproach, hangs upon the memory of this physician, for having allowed his secret to be buried with him in the grave. His son, Henry Ruysch, also a physician, and the assistant of his father in the formation of his museum,

died four years previously to his father, and all means of procuring information upon the subject was lost. From recent researches it would appear probable that the preservative agent employed by Ruysch was arsenic, which so powerfully resists animal decomposition. The extraordinary effect of this otherwise destructive mineral substance has been remarkably shewn in a late case of trial for poisoning, in which it was found, that from the administration of arsenic, the stomach and bowels of the individual to whom it had been wickedly given, were so preserved, as to lead to the detection and conviction of the murderer. Mr. William Pettigrew has been in the habit, in the course of his dissections, of injecting into different parts of the human body a weak solution of arsenic, the effect of which is to resist putrefaction, and render haste unnecessary in the pursuit of anatomical inquiry. He has found a limb, at the expiration of two months, as well fitted for the purposes of dissection, as at the time usually selected after decease.

Upon the death of Ruysch, his museum was publicly sold, and the King of Poland devoted 20,000 florins to the purchase of a part, which was at Wittenburg in the time of Haller.

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